GEOGRAPHY,
RESOURCES & INDUSTRIES

July, 1943

LIPPINCOTT
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EDISON ELECTRIC INSTITUTE BULLETIN

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UBLISHED MONTHLY BY EDISON ELECTRIC INSTITUTE

THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

April, 1943

SOURCE AND DISPOSAL OF ENERGY—MONTH OF APRIL

	1943	1942	%
GENERATION (Net)**			
By Fuel Burning Plants	10,473,450,000	8,983,200,000	+16.6
By Water Power Plants	6,752,328,000	5,609,300,000	+20.4
Total Generation	**17,225,778,000**	**14,592,500,000**	**+18.0**
Add—Net Imports Over International Boundaries	140,033,000	134,600,000	+ 4.0
Less—Company Use	240,984,000	197,200,000	+22.2
Less—Energy Used by Producer	602,078,000	320,000,000	+88.1
Net Energy for Distribution	**16,522,749,000**	**14,209,900,000**	**+16.3**
Losses and Unaccounted for	1,740,369,000	1,673,886,000	+ 4.0
Sales to Ultimate Customers	**14,782,380,000**	**12,536,014,000**	**+17.9**
	CLASSIFICATION OF SALES		
NUMBER OF CUSTOMERS—As of April 30th			
Residential or Domestic	26,653,564	26,203,806	+17.2
Rural (Distinct Rural Rates)	1,072,391	1,083,732	.....
Commercial or Industrial:			
Small Light and Power	4,170,790	4,311,739	− 3.3
Large Light and Power	144,003	148,920	
Other Customers	118,957	120,966	.....
Total Ultimate Customers	**32,159,705**	**31,869,163**	**+ 0.1**
KILOWATTHOUR SALES—During Month of April			
Residential or Domestic	2,318,323,000	2,139,228,000	+ 8.4
Rural (Distinct Rural Rates)	195,242,000	205,583,000	− 5.0
Commercial or Industrial:			
Small Light and Power	2,348,553,000	2,156,102,000	+ 8.9
Large Light and Power	8,408,866,000	6,977,011,000	+20.5
Street and Highway Lighting	160,405,000	158,402,000	+ 1.3
Other Public Authorities	671,117,000	305,050,000	+120.0
Railways and Railroads:			
Street and Interurban Railways	382,889,000	336,319,000	+13.8
Electrified Steam Railroads	213,011,000	188,864,000	+12.8
Interdepartmental	83,974,000	69,455,000	+20.9
Total to Ultimate Customers	**14,782,380,000**	**12,536,014,000**	**+17.9**
Revenue from Ultimate Customers	**$250,156,100**	**$227,610,300**	**+ 9.9**
	RESIDENTIAL OR DOMESTIC SERVICE (Revised Series)		
AVERAGE CUSTOMER DATA—For the 12 Months Ended April 30th			
Kilowatthours per Customer	1,032	1,005	+ 2.7
Average Annual Bill	$37 87	$37.19	+ 1.8
Revenue per Kilowatthour	3.67¢	3.70¢	− 0.8

** By courtesy of the Federal Power Commission

Vol. 11, No. 7, EDISON ELECTRIC INSTITUTE BULLETIN; published monthly. Entered as second-class matter Aug. 17, 1933, at the post of at Philadelphia, Pa., under the act of March 3, 1879. Publication office, 56th and Chestnut Sts., Philadelphia, Pa. Editorial office, Lexington Ave., New York, N. Y. Subscription rate $2.00 per year in the United States; $3.00 per year in foreign countr

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 11 JULY, 1943 No. 7

Annual Conference of Institute is Held in New York

LIMITED by war conditions to one day of open sessions, preceded by an all-day closed conference under the auspices of the operating committee, the eleventh annual meeting of the Edison Electric Institute, held at the Waldorf-Astoria Hotel, New York on June 3, was one of the most productive, harmonious and altogether satisfactory gatherings in the history of the Institute. All sections of the country were represented by the slightly less than five hundred executives who registered for the meeting.

While speakers at both the closed conference and at the open sessions were realistic in discussing their subjects, and faced squarely present and later problems of the industry, the prevailing feeling of speakers and audience was one of confidence in the future and determination to have a hand in its shaping—a feeling undoubtedly bolstered by the increasing public recognition of the superb performance of the electric industry in supplying power in war as well as in peace.

Speakers at the Meetings

At the closed conference, on June 2, at which W. E. Mitchell, vice-president of the Institute, presided, some 15 speakers discussed current problems of the industry including various aspects of the man-power situation, load behavior and outlook, rates transportation, public ownership developments, billing practices, and Government reports and questionnaires; while at the open session post-war planning, and post-war conditions and how they can be best met was the dominating theme of nearly all speakers.

Speakers at the closed conference were: J. A. Longley, The Commonwealth and Southern Corp.; P. M. Downing, Pacific Gas and Electric Company; J. G. Holtzclaw, Virginia Electric and Power Co.; Samuel Ferguson, The Hartford Electric Light Co.; J. W. Parker, The Detroit Edison Co.; William Kelly, Buffalo Niagara and Eastern Power Corp.; Constantine Bary, Office of War Utilities, WPB; L. R. Lefferson, Ebasco Services, Inc.; F. A. Newton, The Commonwealth and Southern Corp.; H. E. Dexter, Central Hudson Gas and Electric Corp.; H. B. Bryans, Philadelphia Electric Company; R. L. Thomas, Consolidated Gas Electric Light and Power Co. of Baltimore; W. G. Bourne, The Commonwealth and Southern Corp.; and H. S. Bennion, Edison Electric Institute.

Speakers at the open session included: C. W. Kellogg, Edison Electric Institute, New York, N. Y.; W. C. Mullendore, Southern California Edison Company, Ltd.; H. M. Sawyer, American Gas and Electric Service Corp.; H. V. Erben, General Electric Company; Dr. Noel Sargent, National Association of Manufacturers; H. C. Thuerk, Bradford Electric Company; C. A. Powell, Westinghouse Electric & Manufacturing Company; Carroll L. Wilson, Committee for Economic Development.

Discussion of Mr. Sawyer's address was made by M. W. Arthur, Consumer Power Company, and R. D. Cutler, The Hartford Electric Light Company. Mr. Thuerk's address was discussed by George E. Whitwell, Philadelphia Electric Company. The addresses made at the open sessions are published in this issue of the BULLETIN.

Five new members of the Board of Trustees of the Institute were elected at the meeting. They are:

Harry J. Bauer, President, Southern Edison Co. Ltd., Los Angeles, Cal.

H. C. Blackwell, President, Cincinnati Gas and Electric Co., Cincinnati, Ohio.

Jack G. Holtzclaw, President, Virginia Electric and Power Co., Richmond, Va.

William E. Mitchell, Vice President, Georgia Power Co., Atlanta, Ga.

J. V. Toner, President, Boston Edison Co., Boston, Mass.

All present members of the Board were re-elected except Edward Reynolds, Columbia Gas and Electric Company, who is now in service in the office of the Surgeon General of the Army, and the late John E. Zimmermann.

All officers of the Institute were re-elected.

Prize Awards Announced

It was announced at the meeting that the winner of the first prize in the Laura McCall Award, offered to companies whose Home Service Directors have made outstanding contributions in furthering the war effort on the home front was the Hawaiian Electric Company, Ltd., Honolulu, Miss Miriam Jackson Emery, Home Service Director. The Award was a commemorative plaque to the company and a war bond to Miss Emery.

"The First Prize winner," the judges' citation said, "was in the unprecedented position of meeting an historical crisis to which it most ably arose. In addition to the varied peacetime Home Service activities which were included in its normal program, the company was faced with a situation of December 8, 1941, of helping a sector of its customers that had been stunned by enemy bombings. Immediately the Home Service Division of Hawaiian Electric Company assumed a responsibility of organizing the canteen set-up by the Emergency Feeding Authority. The canteen fed from 800 to 1200 meals daily. Meals were served over a 24-hour period. For ten days this work was achieved without hired help.

(*Continued on page* 192)

The President's Annual Report to the Institute

By C. W. Kellogg
President, Edison Electric Institute

An address before the 11th Annual Meeting of the Edison Electric Institute, New York City, June 3, 1943

THIS is the fourth successive annual report to you since the War became the preponderant consideration for the nation, and therefore also for our industry so vital an element in the nation's capacity to wage war. Our 1940 convention was held six months after the invasion of Poland and one month after the invasion of France. Pearl Harbor divides this three year period into two parts of approximately equal length. The first part is a period of war preparation and the second part, largely of preparation but combined with war prosecution.

In 1940 this Institute at its annual convention, with a full appreciation of the responsibility of the electric utilities of this country in supplying adequate electric power for the war, passed a resolution which said in part:

"Whereas, the electric utilities are presently prepared with and will main ample plant facilities and the trained, experienced and efficient organizations required to discharge this great responsibility,

"Be it resolved, that the members of the Edison Electric Institute, in convention assembled, express their willingness and readiness to devote their full capabilities, their best efforts and their resources to aid our country by continuing to maintain an ample supply of electric power for war industries."

This solemn undertaking they have so far discharged in so outstanding a manner as to win praise alike from friend and critic of private enterprise. So far as can be foreseen, this pledge to the nation will be equally well performed throughout the war's duration.

Ample Margin of Capacity

Since June, 1940, the combined electric generating capacity of plants serving the public supply, including private and governmental plants, has grown by 6,500,000 kw to about 47,500,000 kw at the present time. Estimated generating capacity at the end of this calendar year will be a full 50,000,000 kw. Since June, 1940, the combined non-coincident peak load on electric generating systems has grown about 7,400,000 kw, so that the margin between such peak loads and the generating capacity to carry it has decreased but slightly and still remains about 10,000,000 kw.

The utilities, striving to keep ahead of estimated power requirements for new munitions plants, went even further with plans for increased generating capacity than developments later showed to be needed; and last August the War Production Board cancelled or postponed completion of 2,200,000 kw of generating capacity that the private utilities were then in process of constructing, the Board finding that the power supply appeared ample and that critical materials thus saved were needed more for other war purposes. The Director of the Office of War Utilities stated within the month that the power supply should be ample through both 1943 and 1944. Judging by cancellations and reductions in the projected war production program that have been announced and by various other statements of officials of the government, the end of 1944 should find the demand for power for war production decreasing. On the other hand, we may assume that, as the most effective way of combating inflation, the production of civilian goods, particularly those most essential and desirable to present day living conditions, will have been resumed or increased before the end of 1944. This will reverse the trend of demand for power for civilian supply, which has been decreasing since 1940, so that the civilian power demand will be on the increase again.

Relation of Industrial Production to Power Demands

The Federal Reserve Index of industrial production has grown 70 per cent from June, 1940, to May of this year. Two-thirds of this present total industrial activity is devoted to war. The one-third balance for civilian purposes corresponds with the level prevailing during the depression period of the 30's. In the past three years the peak demand for electricity has grown only 25 per cent. The reason for this marked difference has been the big improvement in load factor (58.6 per cent at the present time), and this in turn is due in part to longer hours of plant operation and in part to the establishment of Standard War Time.

Energy Output

In energy output, the total for all agencies contributing to the public supply passed the 200 billion kwhr mark in the twelve months ending May, 1943, an output more than double that for the boom year 1929. It represents a gain over the previous twelve months of 13.6 per cent. In 1942 Federal government plants produced about 10 per cent of the total electric energy.

If the output of isolated industrial plants is included, the total supply of the country, from all sources, is now in excess of 250 billion kwhr a year.

It is indicative of the stability of electric utility service that in spite of the enormous power demands of the war industries the proportion of industrial power sales to total sales for all classes of service was actually less than during the period from 1926 to 1929. In 1942 industrial power sales represented 55½ per cent of the total. In 1929 they represented 57 per cent of the total.

Customers

The effect of the war on the number of customers is noteworthy. Residential customers continued to gain in number up to last November, primarily on account of defense housing. Since that time the number has been decreasing slowly.

Retail commercial customers have been decreasing substantially for more than a year. From January, 1942, to March, 1943, 160,000 customers in this class, or 4 per cent of the total, had been lost. This loss was most pronounced in the New England and Middle Atlantic regions and foreshadows similar developments in other areas. It is feared that the threatened brownout, if it should be made effective, will accentuate the closing out of small businesses.

Revenues

Gross revenues of the electric utilities totaled $2,665,000,000 for the twelve months ending May 31, 1943, representing an increase over the previous twelve months of $140,000,000, or 5 per cent. This entire growth was mostly offset by increases in Federal taxes, operating ex-

penses, in spite of increased wages and increased costs of supplies, having been held to a very small increase by careful planning and the exercise of rigid economy by mangement with respect to those elements of operating expense subject to its control. Thus the net income of stockholders in the period referred to was about the same as it was for the twelve months ending one year ago.

Financing

Last year about $480,000,000 was expended by the utility companies for new construction. Of this only one-sixth had to be raised by the sale of securities, the balance coming from current funds. The presently estimated construction budget for 1943 (of $270,000,000) can be financed completely from current reserves.

Manpower

As of May, 1943, the electric utility industry, which in 1940 had 275,000 employees, had contributed about 40,000 of its employees to the armed forces. It is estimated that about 60,000 to 75,000 additional men had been drained away from utility companies to other war industries. These losses have been offset in part by the employment of about 10,000 women to replace men and the employment of about 30,000 men replacements, mostly older men or those not meeting the physical requirements of the armed forces. Total employment in the electric utility industry, which reached a peak of 288,000 in August, 1941, when construction was at a maximum, had fallen to approximately 220,000 by June 1 of this year, a net reduction of 68,000 employees, or 24 per cent. Notwithstanding the fact that the operations of electric utility systems are highly technical and call for much experience and judgment, the draft, combined with the lure of higher pay in munitions factories, has taken many skilled employees away from the operation of utility systems. It is anticipated that a further substantial reduction will be witnessed in the remaining months of this year, but there is a limit to how far this loss of experienced personnel can safely go, and it is the responsibility of utility managements to keep a careful watch on this phase of their operations.

Other War Contributions

To save rubber and gasoline electric utilities have cut down sharply the use of automotive transportation. By eliminating promotion of appliance selling, by curtailing service of customers' appliances, by adopting bi-monthly and quarterly meter readings and by numerous other changes, they have effected a saving of 40 to 50 per cent in the mileage of automotive transportation, resulting in an annual industry saving of 270 million vehicle miles.

At the request of the Solid Fuels Administration, the electric utilities at considerable expense enlarged their coal storage capacity so that last fall they carried on hand 110 days supply of coal and came through the winter with a net reserve of 100 days supply, the best showing in this respect of any industry in the country. This was a nation-wide average; the figures were lower in fuel producing areas and much higher for areas such as New England where long distance transportation of coal is required. Power plants depending for fuel on transported oil were converted to coal burning.

Taxes

In common with other business enterprises, except tax-exempt government and municipal business enterprises, electric utilities have been called upon to finance the war by a substantial increase in Federal taxes. The utilities recognize that tax rates must be proportionate to the magnitude of the war effort. They feel, however, that in respect to the excess profits tax, the 1942 Revenue Act was unfair in that it failed to allow for the charges on the necessary large increases in plant investment made subsequent to the base period. It is planned to bring these facts to the attention of the appropriate committees of Congress in the light of additional information on the subject that another year of actual experience will have made available. Congress did recognize the preponderant weight of capital charges in our operating costs (seven times as great as for the average industry) by providing in the 1942 Act for the deduction of preferred stock dividends in computing the surtax; but this provision still calls for modification to correct discrimination against those companies which have no preferred stock in their financial setup.

Taxes upon the electric utilities now take 25 cents out of every dollar of gross revenue. Federal taxes constitute the lion's share of this. Unlike governmental utility enterprises in Great Britain, which pay both local taxes and national government taxes, government power systems in this country pay no Federal taxes, practically no local taxes and in general make contributions in lieu of local taxes substantially less than such taxes imposed upon electric utilities. Generally speaking, Federal hydro electric projects pay no interest on capital. In the case of privately owned utilities, taxes plus return on the investors' capital, represent half of the total cost of furnishing power—for hydro plants the ratio is much higher. These facts are well known and they represent enormous subsidies which the Federal taxpayer is called upon to make to advance government ownership. Nevertheless, many government officials continue to broadcast claims as to the cheapness of power from projects under government ownership compared with the cost of power from projects under business management. If business management got its capital for nothing and had no taxes to pay, electric rates could be cut in half tomorrow. Similarly, if political management were required to pay the same proportion of taxes as do the electric utilities and if they had to pay the cost to the people of long-term government money invested in the projects they manage, the enterprises they manage would be insolvent.

Other Burdens

The preparation of reports, the answering of questionnaires, the supplying of information to many government agencies constitute a heavy burden upon business management. For the electric utilities this amounts to many millions of manhours of work that could otherwise be diverted into other channels of production. It is recognized that much of the information called for is necessary to the making of important decisions in Washington, but more care and frugality in making demands could surely result in a substantial reduction in the amount of this work, so unproductive from the standpoint of supplying power to turn the wheels of war industry. It is a pleasure to observe that the government, acting through the Bureau of the Budget, is making surveys and has set up procedures aimed at reducing and simplifying government demands on business for reports and questionnaires.

Since Pearl Harbor about 6 million manhours of work and a large part of the time of many utilities executives that should have been devoted to the efficient operation of power systems has been spent in preparation for and attendance upon integration proceedings before the the Securities and Exchange Commission and historical cost proceedings before the Federal Power Commission, all of which could perfectly well be attended to after

the great task of winning the war is over.

Outcome of Municipal Ownership Elections

In the decade ending with 1942 there were 1,039 elections involving the choice between business and political management. In the first three years of that decade, 326 elections were held and 62 per cent favored political management. In the last three years of the decade, 189 elections were held, and 33 per cent were favorable to political management. These figures appear to show a decrease in public interest in the question.

Post-War Planning

There are two general observations that may fairly be made about post-war planning so far as electric utilities are concerned. First, due to the necessity of always being ready for load when it appears and due to the time required to design and install electric plant, planning has been from its earliest days one of the outstanding features of the electric utility industry. Second, since its function is to care for the requirements of others, utility planning must take into consideration what others may be expected to do. For this reason electric utilities are much interested in the plans of other industries and organizations. The Institute has recently appointed a Committee on Post-War Planning under the chairmanship of Mr. H. C. Thuerk, who later in this meeting will discuss the questions now concerning his committee, the purpose of which is to act as a forum for the interchange of information among members, to keep in touch with other industry planning organizations, such as the Committee for Economic Development and planning committees of the National Association of Manufacturers, the U. S. Chamber of Commerce, etc., to confer on broad questions with makers of electrical equipment and to give general direction to Planning subcommittees of the Institute. During the past year there has been a post-war planning committee in the General Commercial Committee, with Mr. George Whitwell, Philadelphia Electric Company, as chairman, and there will no doubt be constituted one or two engineering planning committees. It is not too early to begin to appraise and prepare for the serious problems we can already discern in the pathway lying before us. This industry normally projects its thinking and planning five to ten years ahead. The justification for giving this more than the usual attention lies in the fact that we are confronted by the prospect of unusual changes—changes in competitive conditions, labor conditions, money conditions, new technical developments and perhaps further changes in the relations between government and business. The alert and thoughtful management, with both feet on the ground, is in the best postion to meet successfully the vicissitudes of a period of change and adjustment.

Farm Electrification

I want to say a word on the impressive part the electric utilities of this country have played and still have to play in farm electrification. I mention this because government reports for years have been prone to ignore or belittle this accomplishment by private enterprise.

The movement to get electric service to the farms of the country was started by the electric utility industry 40 years ago and has been formally pursued by them under the title of "Rural Electrification" for 22 years. During the last eight years the Federal government, as a social policy similar in concept to the Rural Free Delivery of the Post Office Department, has used Federal funds to foster the extension of electricity to rural areas too sparsely settled to justify the investment of private capital for their electrification.

Farm electrification has been stopped practically speaking by war demands for copper and steel, but it will doubtless be one of the active fields for post-war effort. At the end of 1942 the total number of electrified farms was approximately 2,500,000, of which about 1,650,000, or approximately two-thirds of the total, were on electric utility companies' lines —a figure which is double what it was eight years ago.

If the people of this nation wish to use Federal funds to subsidize the cost of getting electricity to farms which otherwise could not obtain it, the electric utilities cannot reasonably interpose objection; but the modification of the REA program, to include unneeded duplication of power plants and transmission systems and to compete for non-farm power business against tax-paying companies, is deplored.

Conclusion

In closing, I believe we can summarize our report as follows:

To the Nation, we can report that we have always had ample electricity for both war and civilian demands and expect to maintain this position in the future.

To Our 27,000,000 Home Customers, we can report that their average unit rates for electricity are at an all-time low, while, since June, 1940, average food prices have risen 38 per cent and the Cost of Living 22 per cent.

To Our Stockholders, we can report that in the last two years, in the face of increases of $225,000,000 in taxes and $106,000,000 in payroll and fuel, our balance for common stock has decreased only $52,000,000, or about 9.3 per cent.

To Our Government, we say: Don't expect us to "make bricks without straw"; if our results are to be compared with yours, let it be on a factually comparable basis.

Annual Conference of Institute Is Held in New York

(Continued from page 189)

As a result five members of the Home Service Department were decorated for service."

The second, third, fourth and fifth prizes in the McCall Award were won, respectively, by: The Puget Sound Power and Light Company, Seattle, Wash.; Georgia Power Company, Atlanta, Ga.; Nebraska Power Company, Omaha, Nebr., and Mississippi Power and Light Company, Jackson, Mich.

War Bonds were awarded to the following Home Service Directors responsible for the achievement, under the terms of the Award, in their companies: Mrs. Edith T. Rauch, Miss Fern Snider, Mrs. B. E. Marsh, and Miss Fannie May Izard.

First prize in the Reddy Kilowatt Annual Report Contest was awarded to The Kansas Gas and Electric Company, Wichita, Kansas.

The Judges awarded the prize to that Company because of the human-interest fashion in which the report was written, plus its brevity and simple friendliness that showed an apparent desire to tell as much as possible about the company's operations during 1942.

Honorable mention went to the Birmingham Electric Company of Birmingham, Alabama, and to the Iowa-Illinois Power Company of Decatur, Illinois.

This contest has been conducted for the past several years to encourage the preparation of simplified reports to stockholders that not only clearly summarize the Company's complete operation during the preceding year, but also to make these reports "company advertisements" and "public relations builders."

Some Wartime Revelations

By W. C. Mullendore

Executive Vice-President, Southern California Edison Company, Ltd.

An Address before the 11th Annual Meeting of the Edison Electric Institute, New York City, June 3, 1943

WAR reveals the weakness as well as the strength of men and the structures of human society. The fact that nations still resort to this savage and barbarous method of settling disputes in itself is a revelation of how far we are from the solution of the basic problems of human relationship, and how meager is the intelligence, the discipline and integrity upon which the advance of civilization must depend. I wish, however, to speak today not of the idiocy of war as an institution but of some other revelations which have been particularly emphasized by our country's participation in this greatest of all wars.

First of all, one of the great disclosures of this war is the might of the American industrial machine, and the extent to which the rescue of civilization is dependent upon the preservation of the freedom of enterprise which built that machine. When the Germans decided to go "all out" for mechanized warfare, they unwittingly chose to challenge the American giant at our strongest point. Mechanized war depends upon comparative ability to produce high quality machines rapidly and in huge quantities. It further depends on ingenuity and resourcefulness in adapting those machines to specialized uses and on the ability of large numbers of men quickly to become expert in their operation. Through generations, Americans have been developing increasing strength in all these respects.

In preparing for the war, the totalitarian nations sought victory through the amassing of huge quantities of specialized mechanical war weapons in advance of the declaration of war, and hence at the outset they were vastly better prepared so far as immediate striking power was concerned. But they had not reckoned with the adaptability of Americans and their industrial processes. Despite the serious slow-down of the decade from 1930 to 1940, the American industrial machine and the men who could quickly reorganize it for war production were available. Once devoted to war, our industrial production could far outstrip that of the Axis because free men in America over a century and a half had developed not only mechanical and electrical power and surpassing skill in its use, but also greater self-reliance, courage and enterprise, more boldness, and more resourcefulness than the world ever before has seen within one nation. The tragic course of recent history has demonstrated anew that these are qualities which may be destroyed by government but cannot be created even by the most powerful government in the world.

It is entirely appropriate, therefore, that, even in the midst of war, this story of American achievement on the industrial front should be told; first, because it is so vitally important to the rescue of civilization from the wreckage of this war that at least the American people should understand and appreciate the secret and the source of their strength; and second, it should be told now because our people are interested in the current accomplishments of industry and business, and hence again are willing to study the principles which safeguard that accomplishment. This is an attitude which did not prevail a few years ago when a large percentage of our people were convinced that business leadership was weak and incompetent, and almost persuaded that there was something essentially sinister about American business institutions. This belief had been cultivated by incessant fault-finding and attacks upon business and its management, and by disparagement of its contributions to American life.

The public now wants to know what industry is doing, and how it is doing it. This difference between the friendly atmosphere which now exists and the hostile attitude of a few years ago may prove to be the difference between the restoration of individual freedom and the continuance of the trend toward totalitarian regimentation for the American people. Even before we entered the war, the intensive campaign to destroy faith and confidence in the achievements and integrity of American business already had progressed dangerously near to its intended goal. That goal was government ownership and operation of much of the productive industry, and government control over all industry in the United States. The crisis created by the war in many spheres forced us all the way into governmental direction and control of the whole economy.

Now the news and the advertising columns of our newspapers and magazines, and the news, drama and comment carried by radio are today telling of the services at home and the weapons of war which are pouring to the battlefronts of the world from the factories and shops of our country. Indeed the copywriters in the advertising departments of the country today are often scooping the news reporter, and even within the limits of what can be told under military restrictions, there is enough published to make an absorbing and thrilling story of the achievements of American initiative, resourcefulness and ingenuity working through the organizations and institutions developed in the days of our freedom. The serious question is whether or not the people generally see beyond the power and the machines, and perceive that these accomplishments would have been impossible except for capitalism, the chance for profit which once existed—the freedom of enterprise which is the basic secret of American organization and production. The assumption so frequently and commonly made that if the people are only told what private industry has produced, they will understand and protect private industry against government strangulation may be a false assumption.

The story of new developments and of the volume of production is being well, if not adequately told. The other, and the most important, part of the story is not being so well nor so adequately told, and it is that part of the story which the majority of Americans so much need to understand.

On the surface it might appear that these airplanes, ships, tanks and guns, these radio and other electric devices, these billions of kilowatthours of electric energy which are turning the wheels of the factories, and welding and transforming metal into weapons of war—

that all this miracle of production which turned the tide of war against the enemy at the time when he seemed almost certain to triumph, has become available only since war began, and hence might be attributable to the centralized direction and control now exercised by government. We at home and the boys in the Army and Navy are learning of the performance of our guns and planes and ships, and of the production of billions of pounds of equipment; we see the visible evidence of the ability of our railroads to transport men and equipment in amounts and at a speed never before attained; of the output of our electric utilities reaching unparalleled heights, and we are justly proud of the machines and equipment and of the tools and weapons made available to our boys and the boys of our Allies on the battlefield. But what our people most need to know and to appreciate is that the foundations for this production were laid not yesterday but during the past century; that this strength which is now saving the world is the product not so much of American physical and financial resources immediately applied to these mighty tasks, as of the abilities developed as the result of the freedom of men in past generations of American life—freedom to develop their strength, initiative and self-reliance, not under the guidance of government bureaus nor with funds taken from the people by the powers of government, but on their own credit and savings and through their own effort freely risked in many enterprises, large and small, some of which succeeded and most of which failed, but all of which added to the experience, the versatility, the self-reliance of a great people.

The strength, the technical ability, the great productivity which is ours and which is now again challenging force and tyranny did not spring into being with the beginning either of the first or the second World Wars. It has its roots in American institutions. It is a product of the "Old Deal." Yes, of the Old Deal and not the New Deal. The New Deal began to operate in 1933. From that time until the war began, American industry lost instead of gained in strength. The decade ending in 1940 was a decade of retrogression, of diminution in national wealth for the first time in any similar period in our history. It was, too, a period of discouragement to the risk-taking, the initiative and resourcefulness of the men who are today leading the battle of production. The basis for the great production which today is winning the war was laid in those "laissez-faire," "profit - motivated," "profit - seeking," "planless" years of the past century, and yes, even in that decade of the Terrible Twenties, days which are so often deprecated and apologized for by some who are today proudly lending and leasing the output of plants which but for the mental and physical energy stimulated and liberated by the system they decry, would not now be available.

The advocates of government planning, of government controls, and of the various "spend - ourselves - rich" schemes of the past decade, however, are inclined to place another interpretation upon these facts. They say that our fears as to the unsoundness of their schemes have been proved groundless because of the rate at which we are producing today. They say: "You who oppose our 'social gains and reforms' told us we would weaken and ruin the country. You should now see how wrong you were, because the United States is producing for this war as never before." Unfortunately for this claim of the New Dealers, neither the industrial leadership nor the mass production and other processes which are indispensable in this production, are the products of the New Deal years. They were developed and had proved their ability to out-produce the world before the past decade, during much of which they were persecuted and thwarted. It is not, therefore, the soundness of New Deal philosophy which has been proved, but instead the unparalleled vitality and strength of the "Old Deal," the American way. The ability of that system to take the punishment, abuse and perversion to which it was subjected in the nine years before we entered the war, and yet to respond to the terrific demands now made upon it, is one of the most encouraging revelations of this wartime.

Of all the industries which suffered persecution in the United States during the years from 1933-41, the outstanding one was the electric utility industry. That is an old and painful story and I need not recount it here.

We appreciate the spirit of harmony which is now evidenced in some branches of the government; we desire to do nothing to disturb that harmony; and we particularly appreciate such generous recognition as has been given to the achievements of the electric utilities in the war program. At the same time, it is to be hoped that it will not be taken amiss if we respectfully suggest that our industry has more than served its time and its turn as a scapegoat and a whipping-boy, and that our demonstration of ability to meet the extraordinary demands of war as well as those of peace should prove that basically our industry was soundly conceived and developed.

We have been called upon to participate importantly in every war effort, and we have been both eager and proud to respond. From the construction and operation of the training camp, and the war factory, through to the equipping of every soldier and sailor, electricity has played a vital part. Whether it is the production of aluminum, magnesium, rubber, airplanes, ships, tanks, guns, or any other essential war equipment—from the raw material through every step of the process to the final assembly—it has been the proud privilege of the electric utility to contribute vital energy, not intermittently but every second of the 24 hours in every day that the work progressed. And all this was done not in substitution for but in addition to the continuance of the established service in the homes, the commercial establishments and on the farms of the country. In the year before the war began, 1938, the United States produced 150 billion kwhr against a total of 99 for Germany, Italy and Japan, and by 1942 our production has increased to 188 billion. Through the years since the end of the first World War in 1918, transmission lines, built largely as the result of private initiative, research and at the risk of private capital have covered the United States, and it was the availability of an ample supply of electric power as a result of this development, together with a much smaller amount supplied on public credit, that made possible the rapid construction and expansion of our war plants and output. In short, our industry was ready. No war program has been delayed by a lack or shortage of electricity. Surely such a record does not indicate weakness nor unsoundness, and, I repeat, it is a story which merits telling and which, being known, should merit much fairer treatment of the utilities by their government. If it is to be known and appreciated, it must be told by us to our customers.

We should, however, not be under the illusion that everyone is prepared in the post-war period to take the attitude toward industry in general, and our industry in particular, that is suggested in what I have just said. On the contrary, there is a very powerful school of

thought, as indicated by the recent report of the National Resources Planning Board, which anticipates a continuation of unfair, tax-exempt, subsidized Government competition in the business field, and an extension of Government control over the whole economy.

That a serious attempt is to be made to interpret our war production as justifying continuation of government spending and government planning is entirely clear not only from the report of the National Resources Planning Board but from many other statements and plans, and particularly from polls of public opinion which indicate that the great majority of the public believe it is the responsibility of government to provide jobs. Further, it is evident that many people believe that this is prosperity which the country is now experiencing, (despite the fact that we are destroying our wealth and impoverishing ourselves at an unprecedented rate); that the war has taught us the secret of prosperity and full employment; and that with a "modified free enterprise system" under government control, in the post-war period, we shall go forward to prosperity with full production and full employment.

We might indeed conclude from the emphasis upon plans for the vast extension of government control that the war is being fought not to preserve but to destroy the American system of individual responsibility, and to substitute therefor a system under which government is to be responsible not only for usual governmental problems but for the individual economic welfare of every citizen. It is not emphasized, of course, that this means government guardianship of the individual and the loss of freedom that must accompany guardianship. This kind of planning goes on, and much of it is endorsed by former advocates of free enterprise, at the same time that it is admitted that if we are to destroy totalitarian regimes in enemy countries only to see their counterpart in a government of unlimited powers established in our country, we will have lost in peace much that we hoped to safeguard in victory. Understanding this danger, and being constantly reminded of it by post-war planners who directly or inferentially, endorse over-all government control, spokesmen for American business and industry may be pardoned, if, without indulging in too much recrimination, they should respectfully point out that government should prove its capacity before undertaking this greater task. Not all the mistakes and failures of leadership have occurred in the ranks of civilian life.

From both peacetime and wartime performance, it would appear that government too is made up of fallible human beings and that the titles and habiliments of government do not render one proof against the frailties of human nature. The paramount responsibility of government is the preservation of peace. In that responsibility government has notably failed. Business leadership has been repeatedly and bitterly accused of responsibility for the "bust" of 1929 and the succeeding depression. It has been a favorite thesis of those who would transfer control over the American economic system to government, that, because business leadership failed to prevent the depression of the early thirties, the private enterprise system failed.

Admittedly there is some responsibility on business leadership for the excesses which lead to booms and their corrective depressions. But there is at least some comparable responsibility on government to prevent the excesses and errors in international relationships which lead to wars. It may be a futile argument because it is susceptible of no absolute proof, but I dare say that our government had at least as much control over the forces which led to the outbreak of the war and our involvement therein, as business leadership had over the forces which led to the depression. If failure to measure up to the responsibility in one case disqualifies for an extension of power and opportunity, should it not do so in the other? For example, the failure of the London Economic Conference in 1933 was at least partially the fault of our government and that failure was a very definite contributing cause to the extreme nationalism and degenerating economy which permitted Europe to drift into war. If there were warnings of trouble to come which business leadership should have heeded and done something about before 1929, there were also warnings and plenty of them of the gathering war-clouds both in the East and in the West in the years immediately preceding 1939 and 1941. The blindness and unwarranted optimism that everything was under control and that business was essentially sound prior to the crisis of 1929 was matched by the repeated assurances of governmental leaders that there could be no war and that in no event would we allow ourselves to become involved in war—assurances which were repeated even months after the European war had become such an obvious threat, and the Japanese beast had growled and bared his teeth more than once in our direction.

I am aware that the war is far from being won, and that until it is won, arguments as to the postwar relationships and arrangements might well have been postponed. However fitting such postponement might have been, the advocates of a government of unlimited powers would not have it so. Literally floods of propaganda for continuation of government control after the war have poured forth from government bureaus, much of it disguised as necessary war information and war morale-building effort. Nor has all the propaganda extolling totalitarian ways in government issued from government offices. Both the radio and the motion pictures (in the latter case, probably not without a thought of pleasing certain powerful government officials) are being utilized to convey glowing pictures of the wonderful way of life developed in another land through governmental control and ownership of the means of production and governmental suppression of the right of its critics to a fair hearing.

Surely it is neither fair nor reasonable to ask the advocates of freedom and the free enterprise system to remain quiet until after the war in the face of such continuous efforts to sell these totalitarian ideas to the American people.

I am aware, too, that this theme upon which I have finally landed in discussing wartime revelations is an old one, and that many would prefer to hear something new and different. There is in the air an atmosphere of appeasement of the proponents of the new social order and many business people are affected thereby. I can even imagine some of you wanting to say to me: "After all, Mullendore, isn't your story a bit threadbare? It is the same one upon which you have harped every time you have had a chance to talk in the last twelve years. Don't you know any other tune? You may not have tired of it, but some of us have." I plead guilty to that indictment.

I may, however, be permitted to say that while this may be an old and threadbare theme, it is still a very live one. That is, it is a live one to those of us who have not surrendered to the defeatist philosophy that because the opponents of free enterprise have made so much progress, we should try to compromise

with them and save a little something for ourselves, leaving it to our children to adjust themselves to the new order. I submit that not for one instant should we admit that because the issue between private enterprise and government ownership, between free American capitalism and State Socialism, is an old and battered one that it has lost one iota of its importance.

When in 1931 at Atlantic City, I first spoke to a convention of this industry upon this issue and warned that the battle lines were being drawn and that our opponents were moving into position, few if any of us realized, or could have believed, that the next twelve years would see so much action, and private ownership in the utility industry subject to so much punishment. We were subjected first to a blitz and then to a siege, and our opponents seem today to be in a strong position. They have captured some territory and a few of our leaders have deserted our cause. But instead of giving way to despair, can we not take heart from inspiring proof in recent history that a good cause, however hopeless it may appear, is never lost so long as it does not surrender and so long as it can command courageous and determined leadership. The blitz of 1940, which knocked France out of the war and drove the British from Europe, followed as it was by the blitz on England, most certainly would have resulted in a victory for Germany within a very short time but for the stout heart of Englishmen who did not know when they were licked.

I am not indulging in exaggeration, but in a sober statement of a most important and vital fact when I tell you that even as the defeat of totalitarianism depended on the stand which Winston Churchill and many other gallant British leaders made in the fall of 1940, so does the cause of freedom and the American way of life depend on the stand which the leaders of American industry are willing to make now and after this war against the onrushing tide of State Socialism.

Collectivist thought and action, willingness to acquiesce in Government control and direction of the economic and social order, prevail to a degree never before known in our country. Men whose long experience and training in American business should have taught them that there can be no such thing as prosperity nor an increased standard of living if centralized government is to attempt to plan and direct economic activity and act as the guardian of every individual citizen, nevertheless are either approving by silence or accepting such plans as those for huge government spending to provide employment; government operation of the banking and credit system of the country, and similar collectivist schemes which simply mean the death of the free enterprise system. It is not only misleading but very dangerous for business leadership to be telling the American public, by inference if not directly, that regardless of the kind of government we have after the war, we will have rapidly expanding markets for new products—the plastics, chemicals, new metals and alloys, the new airplanes, and other improved transports, new electrical appliances. Unless the strangling hand of bureaucratic government is removed from the economic machinery of America, these optimistic plans cannot be realized.

The economics of war, which is totalitarian and collective, is very dangerous preparation for the economics of peace in a free country. The regimentation of price-control and rationing, the dependence of business upon government orders and the wholly temporary and false stimulus given to demand by the creation of unlimited debt—all these, which go with war and which are largely necessary in time of war, warp the economic thinking of most of the people and condition them to accept a continuance of a great deal of this same regime in time of peace.

Let us not delude ourselves nor help to delude others. Wars do not lay the foundation for prosperity or progress any more than does a terrible and wasting disease lay the foundation for greater strength and vigor in the human body. The period of convalescence from this world-wide destruction of millions of young men and billions of natural resources and productive equipment, the increase and intensification of hatred, the deliberate cultivation of some of the worst traits of human nature, must of necessity be long and painful. We are not saving and accumulating wealth in the world today. We are destroying it at a rate never before even approached. We are not accumulating purchasing power, because true purchasing power is composed only of real wealth and not of the evidences of debt arising from the destruction of real wealth. True, we are learning some new processes and in the search for means of destruction we are learning some new means of production. But it takes more than blueprints and formulas, it takes more than the mere accumulation of destitution and need to produce the material wealth which will be required to repair the gaping wounds resulting from this world holocaust.

Civilization can be saved even from the hatred and destruction of this war, but to save it, we will need every ounce of strength and all the accumulated wisdom of the ages. Most of all we will need to restore at the earliest possible moment and in every possible respect the strength which comes only from the striving of free men under a free economic system. We cannot recover from this war under a slave economy. We will not develop the markets for new products, nor the organization of men under competent leadership, under a planned economy controlled by a few men exercising the power of government, even though by some miracle we should be able to secure the wisest men in the world to exercise that power. Power must be diffused among the people after this war, and not held by government. If it remains concentrated in the hands of government, whether that government be called democratic or autocratic, there will be no sustained recovery.

These truths are the revelations which should have become apparent as a result of the outbreak of this war in the first place, and as a result of its trend and its course in the second place. It is going to take courage to face the facts which are daily coming into bold relief as the war progresses. It will take even more courage to stand up against the counsel of despair which advocates surrender to and attempts at appeasement of all-powerful government after the war.

I have faith that a people who have the strength and the courage to rescue other nations from totalitarianism will not surrender to totalitarianism at home. I have faith, and I ask you to have faith, that a people will not destroy the source of their productive strength just after that strength has saved the world. Let us accompany our faith with the hard work and plain speaking which will be required squarely to face some very unpleasant facts and to do something about them.

Planning to Be Done

By H. C. Thuerk

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An address before the 11th Annual Meeting of the Edison Electric Institute, New York City, June 3, 1943

FAITH and confidence in a business comes about largely through its ability to furnish promptly and at reasonable prices the demands for its products and services. To accomplish this in our industry, as in other utility enterprises, requires the initiation of projects months and years in advance of their actual need. Planning, therefore, is nothing new to the electric light and power industry. Since the inception of our business, our sights have been set at long-range focus.

What this policy has contributed to the successful promotion of the present war program has been ably explained on various occasions by President Kellogg and other spokesmen for the industry. Long-range planning provided the organizations, the power plants, transmission systems and distribution facilities fully adequate to pick up the tremendous increase in power demands brought about by war production, literally without "missing a stroke." Largely as the result of this accomplishment the public is beginning to realize that this country has been provided with the best and most adequate electric service in the world.

But let me warn you that man's memory is short. A year, two years or five years from now, people will not appraise us on the basis of what we did today or yesterday. No, indeed, the measure will be what we are doing *then* or what is even more important, what we are going to do *tomorrow*.

It was probably this sort of reasoning that prompted the appointment of your Post-War Planning Committee, and the charging of it with the responsibility of encouraging more thinking on the post-war situation and problems. We held our first meeting this week and are now giving serious consideration to our assignment and how best to carry it out.

The real planning for the industry must be done by the operating companies themselves. Each company will be faced with many problems peculiar to its own situation and area. Our job then as a committee should be largely to function as a clearing house and thereby help to bring to you the planning ideas of other companies. The degree to which we are able to function in this direction will depend upon your contribution to the fund of experience.

And so with this introduction, we ask you to consider yourselves from now on as members of this planning committee and that today we want to discuss some thoughts which might stimulate further the development of practical thinking on post-war procedure.

Let us review first the planning task as it relates to our own industry problems. In talks with several utility executives, I find the majority believe that the most important job is the appraisal of our markets under post-war conditions and from these appraisals, the planning of the necessary additions to our facilities.

From the present outlook, the deferred demands for both consumer and durable goods in this country will be relatively much greater than after the last war. The manufacturing capacities of many nations of the eastern hemisphere will have been severely reduced as the result of the destruction of their factories and other production facilities, so we may witness a great increase in our export business for several years after the close of the war. These latent demands, coupled with the potential earning ability of our own citizens, can supply the basis necessary to create high levels of activity in all business and trade.

You will understand, of course, that I am not attempting herein to deal with the fundamental conditions upon which our whole private enterprise system depends. Let me emphasize, however, that in all our post-war planning we are assuming that governmental policies and social atmosphere will permit the revival of our American free competitive exchange system, now largely suspended.

If these conditions materialize, then we may expect that people will be building new homes and improving others and will want to equip those homes with the most modern types of electric appliances and devices. Stores will want to modernize in order to compete successfully for their share of the post-war business. Industry will have to modernize, too, and replace much of its productive machinery which by that time will have become economically obsolete. As the result of working in well lighted war factories, people will be wanting higher levels of illumination in their homes and on their streets and highways.

Many new applications of electricity are today in their experimental and development phases. How many of these will reach the production stage in the post-war days and what will they contribute in the way of increased markets? What about the reversed refrigeration cycle method of heating? Will this become a practical companion to summer air conditioning in certain climatic areas? What about induction heating? Where is the limit to practical applications of infra-red, of electronics?

Now this tremendous market which lies ahead presents a real challenge to the electric utilities, the electrical manufacturers, the distributors, and the dealers. Can we all cultivate this garden of opportunity in a manner that will enable us to continue the expansion of our respective businesses on a sound financial basis? How best can we carry out our obligation to the public to see to it that electric service continues to play its part in providing more comfort and convenience, a higher standard of living?

To discharge our obligation will require some serious thinking about our future commercial and sales policies. The electric light and power business has never been solely a regulated monopoly —it has been and is a regulated competitive business. In the struggle for the post-war dollars we shall be faced with the keenest of competition from hundreds of other businesses, many of whom have already established post-war planning groups and even now are engaged in building up future demands for their products in the minds of our customers.

Other forms of energy will be participating actively for the cooking, water heating, refrigerating and air conditioning load of the nation. We must keep ahead of these competitors with better merchandising policies and more appeal-

ing equipment whose operating costs are fully competitive.

Margins of profit in the future will probably be such that all enterprises will be receptive to opportunities to lower production costs. We shall need perhaps under these conditions to give more study to the welfare of our individual industrial customers and to assume a share of the responsibility of keeping them in a competitive position in their markets.

To meet successfully these conditions in the post-war period will require some careful consideration of the sort of sales organizations we shall require and as to whether our rate structures will need further amending. The time has come to reappraise for the future our rate set-ups and to adopt revised policies based on new concepts of customer usage. It is assuring to know that almost a year ago the General Commercial Committee of the Institute recognized the need for forward planning on these broad commercial questions and appointed its own planning committee under the chairmanship of George Whitwell.

Our engineers have the job of determining now what additions and replacements must be made to generating, transmission and distribution facilities to supply the increased loads to come eventually from postponed civilian demands, the return of standard time, the elimination of brownouts and blackouts, and the probable tendency for industry to curtail night work and concentrate production in the eight-hour day shift. The work week will undoubtedly be shortened in many areas, thereby further contributing to lower system load factors.

Detailed construction plans which can be put into prompt use at the close of the war will contribute materially to combating the unemployment problem. If operating companies would proceed with the preparation of such plans, it would be possible at a future date to announce a construction program for the industry. The publication of such a program would indicate to the public more effectively than perhaps anything else, that we have been doing some fundamental thinking on the problem of providing an adequate electric power supply after the war, and that through that program would furnish additional employment in communities throughout the nation.

As many of you know, the American Telephone and Telegraph Company has announced its estimated post-war construction needs for a ten-year period. Another striking example of long-range planning is the program of the Long Island Railroad for the extension of electrification of its service area over a period ending in 1960.

Plans for post-war construction programs should not be confined to major products. Some companies are looking with favor on the idea of completing now the designing of minor improvements to existing facilities because of the fact that their construction can be started on short notice.

Through efficient management, aggressive sales promotion and intelligent engineering and operation, the selling price of electricity has steadily declined. In spite of increased operating costs and heavier taxes in recent years, our rates are now at their lowest in the history of the industry. Every effort must be made to keep the price of electricity low in order that we may maintain and improve our competitive position.

As we look ahead to discover ways of reducing costs, there seems to be little to expect in the realm of wages and interest rates. Although we hope for the elimination of war taxes, relatively high taxes may be expected to continue. It would therefore seem that opportunities for reduction lie principally in the direction of lower capital investments and higher operating efficiencies.

I have been impressed with the progress made over the years in the standardization of products and the resultant reduction in selling prices. Through research and development, coupled with volume production and continued standardization, the cost of the incandescent lamp has been strikingly reduced and the quality steadily improved. Similarly, marked reductions in the cost of other items have resulted from the standardization of frequencies and voltages. These accomplishments were made possible only through the wholehearted cooperation of our own industry.

As you know, in recent years a fine start has been made by the manufacturers, with the aid of our own engineers, in reducing the prices of light electrical apparatus. A wider application of the standardization idea in this field and its intensive extension to heavy electrical equipment offer still further possibilities for lower investment costs. It would seem desirable to explore fully the advantages of such a program and to give consideration promptly to the most effective means of arranging for our further cooperation with the manufacturers in this important task. If the chief executives of both our companies and the manufacturers believe in the soundness of further promoting the standardization idea, and want some fairly prompt results in this direction, they should convey their feelings clearly to those to whom they would assign this task.

The benefits of standardization are not restricted to lower first costs but, what may be just as important, may result in operating advantages and economies. So our operating departments, too, have a real stake in this activity.

Our engineers will have other important questions to consider. Among them may be the matter of reserve capacity and its relation to overall costs of electric service. Has our experience with war production in the past few years indicated that we can adjust our ideas as to how much "reserve" we need? What is the relation between reserve capacity and the prices which our customers are willing to pay for electricity? Can we reduce these reserves through further interconnections?

It is true that provision for spare generating equipment during the years leading up to the present World War contributed in no small measure to the absence of a power shortage today. But whether it will be good judgment in the future to continue to have the prices for electricity include the same charge for reserve capacity is something for us to ponder. And when we think along these lines we might well consider the desirability of continuing after the war operating procedures which have been brought about by a lack of manpower and materials and which have resulted in certain economies.

A family may look forward to owning a modern streamlined automobile in the post-war days but if dad can't dig up the cash to buy it, the car will never leave the salesroom. Like dad, the officers of our companies will have the job of supplying the funds necessary to effectively conduct our business and carry out our future construction programs.

Like all private business, we hope that at the close of the war we shall be in such financial condition that the money required to undertake such construction projects as may be needed can be obtained quickly and economically. Perhaps the usual sources of construction funds should be analyzed more carefully than ever before in order to determine the proportionate share which each may be able to contribute to the total. What

about reserves for retirement? What about net earnings?

Let us be realistic in our approach to these financial problems and ourselves adopt measures designed to assure the funds to expand and improve our physical plant. With business management doing everything in its power toward assuring post-war employment, Federal and State taxing and regulatory bodies should also be expected to shape their policies so as to place and leave business in a financial position to carry out such plans.

In our planning for the days to come, in our consideration of markets, construction, engineering and financing, let us be sure to give full consideration to the personnel problem. If it is important to forecast markets and additions to physical plant, isn't it fully desirable to forecast our personnel needs?

To keep an industry vigorous requires the constant assimilation of younger men who will become our executives of tomorrow. How does the average age of our supervisory and executive personnel compare with other thriving industries? Have we given enough consideration to pension and other plans as a means of keeping the efficiency and progressiveness of our industry at a high level? What can we do to keep our business attractive to up-and-coming young people? Are we providing adequate employee training programs?

In our deliberation of all these questions it will be well to remember the influence which public opinion has on the welfare and permanency of any business. Progressive industries and individual enterprises recognize the need for regularly sampling customer opinions of their products and methods. And when John Q. Public indicates that changes are necessary, they make them.

William E. Holler, general sales manager of Chevrolet, coined a significant phrase when he said, "When you are through changing, you're through." Let's not be afraid to change our ideas and our methods, even if some of the proposals sound unorthodox.

We need to give especial thought to the opinions of our customers because in the minds of many of them we represent the antithesis of free enterprise. Americans, as a whole, through surveys say they like to buy their needs under a system of free competitive enterprise. But where do they think we fit into the picture when it is impossible to buy their electricity from anyone else?

Now *we* know that the private electric utility is just as much a product and representative of free enterprise as the corner meat market—but does the lady down the street? How about our own employees? And have we kept them acquainted with vital information about our company? Remember, it is not the facts that count today—it is what people *think* are the facts.

Along with these industry problems we should keep in mind that the general health of our business is influenced markedly by the general well-being of all business. In our thinking, then, let's include consideration of the conditions which all private enterprise will face after the war.

A cross-section of American life during the days preceding the shadows of the great world conflict discloses a nation whose citizens were engaged in producing and distributing goods and services for themselves and others—all for the purpose of improving their own standard of living.

Today we find those citizens devoting their entire energies to the great task of winning a war. No longer is a higher standard of living the immediate objective. Millions of our citizens have had to give up their jobs and put on the uniforms of our armed forces. Others have given up their peacetime pursuits to engage in other war activities.

When the war ends, these legions of Americans will want their jobs back, in order that they may return to their former pursuit of the good things of life. If this transition can be accomplished so there will be no sustained periods of unemployment, then we shall have laid a good part of the foundation for the sound resumption of progress on the road to higher levels of economic security and living.

As an industry, we should be seriously concerned over the employment situation after the war.

How may we best contribute our share to the successful solution of this problem? In addition to those steps which can be taken in our own industry to stimulate employment on a sound economic basis, and perhaps this is more important, we can join our efforts with those of other businesses. Surely there has never before been a time when each industry should recognize more clearly its responsibility to make available to other industries its thinking on problems common to the welfare of all.

What can we do to stimulate employment by the electrical manufacturers, the wholesalers, the local dealers? How about the building and construction industries? Shouldn't we give particular thought to ways and means by which we can help to spur activity in these fields, particularly since they have contributed in no small way to maintenance and growth of our own revenues.

Let us also cooperate with business associations which have formed groups to consider this broad objective, such as the planning committee of the National Association of Manufacturers, the planning committee of the United States Chamber of Commerce, and the Committee for Economic Development. The aims of these organizations, as you know, are to develop through sound and constructive community action the means whereby industry and commerce can make their maximum contribution to high standards of living for all of our people through high levels of employment and productivity.

In spite of careful analysis and planning by private business, there will undoubtedly be pressure for government spending on public works to stimulate employment, particularly in areas where industrial and commercial enterprises are not well situated to take the full load. It is worth while, therefore, that utility management in the various sections of the country, but particularly in areas where unemployment could be severe, contribute its full support to local planning agencies in the preparation now of a soundly financed program of the genuinely useful and necessary municipal and county improvement projects which could furnish employment until private business can fully absorb the supply of workers.

Many states have already passed enabling acts to set up state-wide planning commissions and these bodies in cooperation with local groups should be able to plan effectively for the building of needed and desirable public and private projects in regions where post-war employment lags. There will be sound need in many areas for new hospitals, schools, airports, libraries, sewage disposal systems, and storm sewers. In others, water filtration plants and new water supplies, and street and highway additions and improvements may be desirable. Just a few weeks ago in my own city of Bradford, our Hospital Association announced the inauguration of a long-term drive for funds to construct a new and modern hospital after the war.

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Saving Small Industry As Future Customers

By H. M. Sawyer
Vice President, American Gas and Electric Corp.

An address before the 11th Annual Meeting of the Edison Electric Institute, New York City, June 3, 1943

WHEN I joined this industry more than thirty-two years ago, it was still an *electric lighting business* and it was little business—a small industry. The company which employed me as its first "power engineer" was one of the first purveyors of electricity in the United States, having been formed in 1882. The man for whom I went to work, its manager, who was then younger than I am now, had started it himself—so young is our industry.

He was fond of telling me that his father had endorsed his note for $10,000 to provide the funds for the new venture. After years of operation, when a renewal and further endorsement became necessary, the parent's confidence in the project had so declined that he said the next time he had $10,000 to throw away he would personally throw it in the river and at least have the fun of seeing the splash.

In those days when 93 per cent of our load was lighting, the actual connected load in power was 635 hp and this in an industrial community with a population of over 50,000.

Looking out over this audience, I see the faces of many men to whom these early days are an old story. They have the fullest understanding of and sympathy with small business, for basically they have always been engaged in it. They have only to remember that the electric light and power business, which was originally essentially a small business, is now the integration of a mass of small businesses of like nature and, from the local standpoint, is still small business.

Today, when our industry is faced with many serious problems affecting its corporate, financial and physical status, and when opportunity for this group to treat of these and other serious problems is so limited, any discussion of one particular cross-section of our customers might seem of minor importance. On the other hand, the earnings and credit, now and in the future, of our operating utilities are matters of vital importance and to me it seems right and proper that we should give most serious consideration to the problems relating to that group of customers falling within the wide range which is classified by our organization as Commercial Light and Power, and particularly those within this class that we term "small industries."

To discuss this subject intelligently, it would seem advisable to set forth, with some care, a definition of what we mean by small industry. It is not my purpose to burden this paper with tabulations or unnecessary statistics nor to go into the lengthy analysis, in terms of revenue, demand, and consumption, that would be required to accurately frame this small industries group. The United States Department of Commerce considers a "small manufacturer" as one that has 100 or less employees, and estimates that 90 per cent of American manufacturers fall in this category. I like to consider small industry as any manufacturing customer with demands, let us say, from 10 to 200 kw. Either or both of these definitions will do, if we bear in mind that in a philosophical approach to the problem before us we should not be limited, too narrowly, to this range.

There are three major classifications which we use in our business: residential service, which includes rural service, gives us, roughly, about 37 per cent of our total revenue; the small light and power group which, in general, takes in all commercial and industrial customers of 50 kw or less, gives us bout 27 per cent of our total revenues; the large light and power classification, which includes industrial and commercial customers of over 50 kw gives us approximately 29 per cent of our revenue. Street lighting, railway and other miscellaneous services complete the total.

Small industry includes some customers from the small light and power classification and some from the large light and power classification. The per cent of total revenue secured from small industry, as I have roughly defined it, varies with each operating company and yet I am convinced that if I use as a guide some approximations from the system with which I am associated, it will be indicative of the importance of this group. I have assumed that of the 27 per cent in revenue that we derive from the small light and power class, better than ½ comes from small industry, and that at least 1/3 of the revenue from the large light and power classification is derived from small industries included therein. This being the case, approximately ¼ of our revenue is derived from small plants, whereas the kilowatthours delivered to these customers represent only about 1/5th of the total kilowatthours sold. This immediately indicates the importance of the group from the standpoint of realization, and it is probable that throughout the country the electric energy sold to it averages a rate of between 1½c. and 2½c. per kwhr.

I would be the last to contend that any particular group or classification of customers is of itself determinate as to the company's rates and policies. We must recognize that all groups are interdependent. Nevertheless, the fact remains that the reasonably high realization of the small industries group weighs heavily in determining policies for its preservation.

The individual requirements of small industry for electrical capacity bulk large in the non-coincident total. However, because of their wide variations in methods of manufacture, type of product and time of operation, the coincidence factor as applied to their individual demands is extremely high and the diversity of the group with our other customers is large. Studies made in recent years by the Committee on Load Characteristics of the Edison Association have conclusively demonstrated this. Again I will not burden you with the exactness of their calculations.

Quite aside from its importance from a revenue and capacity standpoint, it seems to me that this group embraces many other elements having a direct bearing on the well-being of the utility and the district it serves. In larger metropolitan areas, and even to a greater extent in the smaller towns and cities,

small industrial concerns contribute, materially, to the permanency of local employment. Their payrolls in the small towns are often the backbone of community prosperity. They are purchasers, locally, of many items that go into their plant, their tooling and their product. Their management actively participates in all phases of local civic activities and many times in local government. They are the very essence of the stability of the community and, normally, the fluctuations in their business do not have the wide swings that so often occur in large industry.

Many phases of the economic structure of this country have been built on the survival and success of small business.

The group has had some tough sledding since the start of the war. Many small industries have been forced to curtail their operations materially or to go out of business completely. Many others, principally through the initiative of their managements and the ingenuity of their production organizations, converted their operations from peace-time to war-time work and succeeded in securing prime war contracts or subcontracts.

Smaller War Plants Corporation requested the National Association of Railroad and Public Utility Commissioners to assist in a comprehensive survey of what it called "distressed plants" defining "distressed" as those which were "operating at 2/3rds normal capacity" and defining "normal capacity" as "the five-year average production before the war, or the 1941 volume adjusted to the Department of Commerce index figures." In response to the request of local state commissions, two of our companies located in a highly industrialized section of the country made exhaustive surveys and in this connection devised a form which was particularly helpful in the development of the necessary information. Copies of it are available at the Institute. I mention this particular survey because it disclosed to us two conditions. First we found that lack of labor seemed to be the major element in the partial closing of plants—at least this was given by the operators as their reason therefor, rather than that they had not been able to secure business. Secondly we found that in a considerable number of cases the management of small industry did not desire to be classed as distressed, and therefore were disinclined to give us any information. To us this was confirmation of the need by small business management for a more thorough understanding of the problems ahead of them, and an indication of the need for constant organized cooperative effort to help them.

While I am speaking only for myself, and not for my company nor for the industry, there has seemed to me to be a tendency within the utility industry of a degree of indifference to this most serious problem. This indifference, I believe, comes about through perfectly natural causes. We have properly had to be concerned with the operational problems of our own companies, and perhaps we have unconsciously felt that the other fellow could take care of his own problems and did not need the help which we would strive to give him in normal times. Our complete discontinuance of sales promotional activities, brought about, in all propriety, by a desire and a need to convert from business-as-usual to an all-out war effort, has brought into increasing prominence the problems of engineering and production, as contrasted with those of utilization. Large industry has expanded rapidly and has required us to meet tremendous demands, individually and collectively. The problems of expanding and building the producing power plants and other facilities to supply this capacity, at a time when materials and labor have been difficult to secure and when time of completion has been of the essence, are naturally ones that bring production and engineering to the fore; but I have felt that management must not ignore or relegate to the background the importance of retaining, in so far as it is consonant with the war effort, the greatest proportion of small industry that is possible. I see nothing inconsistent in such a point of view. Small industry can and has taken part on the fighting front through the medium of conversion, wherever possible, to the production of war materials. Where this has not been possible they have assisted in supplying the necessary goods for essential civilian use.

I do not mean to infer that we should try to solve all of small industry's problems for it or patronize small industry. By its very nature small industry exemplified individual initiative as perhaps no other group in the country. The final responsibility for its continued operation and success must be borne by its management. Nevertheless, there is a lot which we can do; and if we fail to give all the help that we can, we are remiss in our duty to the community and to the country.

Merely to outline what is happening and may happen within this group is not enough. We must determine what can be done now and in the future to protect against further curtailment of small industrial operations. The job of preventing present curtailment lies not only in assisting small industry to keep itself economically sound, but in protecting against its elimination as a base for the needs of employment and production in the post-war economy. I am not going to take up your time with a recitation, in detail, of what has been done in the past for small industry. I am certain that every company here represented has developed its own plans to help its customers to stay in business.

I do think worthy of comment the plan tried by one of our companies in the past two years. In an industrial town of some 50,000 population, there was set up an Industrial Council formed of representatives of the Chamber of Commerce, the Junior Chamber of Commerce, Retail Merchant Association, utilities, banks, Real Estate Board and large and small manufacturing companies. This Council appointed a subcommittee to arrange for the pooling of those small industries that could not secure subcontracts. A pool of 19 such small industries was finally formed and began bidding for work.

An employee of the electric company is a member of the Industrial Council and their power engineer is on the Subcommittee on Small Plants, and they did most of the survey work in connection with the activities of the pool.

We all know of the attempts by branches of the Government, such as O.P.M., and subsequently W.P.B. to help in this matter. We know that often through the efforts of the power sales engineers of our various companies, district offices and procurement divisions of these organizations, as well as the similar departments of our armed forces, were assisted in finding outlets for small plants' products, or ways in which they could convert and secure contracts. We know that in recent months subcontracting by large producers of war materials has increased materially, apparently because large industry itself appreciated its inability to carry the entire load and get the job done quickly, and also, I believe, because large

industry now fully realizes its obligations to the economic welfare of the country in maintaining a wholesome small industries group. The reports of two of our largest automobile companies have recently come to my desk and show the results of this trend. Both General Motors and Chrysler Corporation state that in excess of 50 per cent of the total volume of their business has been subcontracted. In the case of Chrysler these subcontracts were let in 856 cities in 38 states with 8,079 different companies involved.

I think it is generally conceded that the limited success heretofore obtained has been because small industry did not realize the extent to which it would be affected by the diversion of materials to war and the loss of manpower; and then when faced with the drastically changed conditions, it lacked understanding of the problem of conversion to war or to non-critical civilian goods, and of how to go about overcoming it. Another reason for the modest results obtained has been the lack of authoritative procedure vested in procurement agencies.

Last year Congress, realizing the need for a more active and powerful approach, created the Smaller War Plants Corporation. The organization of this corporation is provided for in Public Law 603 of the 77th Congress entitled, "An Act to mobilize the productive facilities of small business in the interest of the successful prosecution of the war and for other purposes." The Act is short and concise and I think that one of the first steps in our thinking towards the solution of this problem within the industry should be for every man having anything to do with it to read the Act carefully. The Smaller War Plants Corporation has wide powers for assisting small industry to convert to war work, it has powers to accept prime contracts from the regular procurement agencies, such as the Army, Navy, Maritime Commission, etc., and to let subcontracts.

I have discussed with General Johnson the intended procedure of the Corporation, of which he is Chairman. We know General Johnson as a most able, enthusiastic administrator, and I am certain that excellent results will be obtained by the cooperative efforts of all interested persons. General Johnson mentioned to me, particularly, the importance of the utilities in solving the problem, because they are fortunate in having in their power and industrial sales departments men of long experience who have intimate knowledge of their customers' plant facilities and operations. He stated that he had already had most helpful assistance from them.

General Johnson's basic theme is "Find the distressed plants, get them interested and get some business for them." His organization will use twelve regional offices distributed in the United States. He hopes to have 140 field offices located strategically on the industrial front. He will have contact men in each procurement agency and central headquarters where procurements are planned.

This Corporation has a complete plan for coordination of all organizations interested and I call to your particular attention the fact that the Smaller War Plants Corporation has authority to give financial assistance, both for conversion and for actual production of materials, and has set up a plan for covering this aspect of the problem. Clearance of procedural problems has been secured between the War Production Board and General Johnson's organization.

The details of all of these plans are set forth clearly in organization charts covering both executive and field branches, in General Johnson's formal memorandums of March 19 and April 7, and in a joint memorandum issued by Mr. Donald Nelson of the War Production Board and General Johnson under date of April 19. I am sure that all of this material can be secured either from the regional directors or from the Smaller War Plants Corporation in Washington.

As to the post-war years, I see no reason for any very great variations from the thinking and methods we must use for the present. Properly inspired small industry cannot only rehabilitate itself in the post-war years but can go forward to greater and broader fields of endeavor. We all know that the tremendous developments in research along metallurgical, engineering, chemical and inventive lines are going to lead to the application of the new products and devices to all kinds of consumer goods. With the economic limitations of large industry to profitably manufacture goods with restricted consumer markets, the opportunities for small industry to develop many of these new applications and devices may be unlimited. After the war the small producers may be able to convert to the manufacture of consumer goods more readily than large industry and thus may act as a cushion against too great a depression in general industrial activities during this period and save to themselves and to large industry considerable purchasing power which might otherwise be dissipated by unemployment.

The development of new basic materials from agricultural products, and their commercial application, opens a tremendously wide field to small industry.

Chemurgy, while at present considered mainly a name, is advancing rapidly, and the small industrial concerns of the small villages and towns will have fields open to them similar to, if not greater than, those existing in the early days of the last century.

As I have said, I do not believe that the utility can do more than assist and guide the operator of the small plant, and I offer for your consideration an outline of some of the things that we can do to inspire him to help himself. It is based on the belief that this is fundamentally a selling job and that therefore cooperation, and organization with performance, is required.

First, management, itself, must be completely convinced of the desirability of an active, aggressive program.

Cooperation

Management should thoroughly familiarize itself with all of the agencies, both governmental and private, that can be used, such as the local chambers of commerce, boards of trade, industrial organizations, the War Production Board, the small war plants sections of the Maritime Commission and the Army and Navy Departments, and particularly the Smaller War Plants Corporation. It should acquaint itself with the various committees or divisions of these organizations essentially designed for this work, and with the individuals responsible for the furtherance of plans to help small industry.

There is now being formed throughout the country, various sections of the National Committee for Economic Development. The National Association of Manufacturers are actively engaged in broadening the scope of their organization. It seems to me that through our representatives we can inspire active participation in these organizations by the management of small industry, all toward the end of bettering their position now and in the post-war years. Not only should small industry be inspired to participate in the work of these or-

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Work of the Committee for Economic Development

By Carroll L. Wilson
Committee for Economic Development

An address before the 11th Annual Meeting of the Edison Electric Institute, New York, June 3, 1943

IN inviting me to address your meeting, you have conferred, perhaps unwittingly, a very special privilege. You see, for me, this meeting is like a reunion with old friends.

Eighteen years ago last month, Westinghouse Electric sent out one of its youngest cubs from East Pittsburgh, to be the industrial heating engineer in its Detroit district. For the next few years, I was very busily engaged in promoting the use of glue pots and Babbitt pots, electric bake ovens and electric furnaces, welding equipment and other load-building devices. During that time, it was also my privilege, naturally, to make the acquaintance of some electric power companies and their operations and practices, in particular, Alex Dow's Detroit Edison Company.

From that time on, it has been my continuing hope that some day, I might have the pleasure of giving a tribute to the Detroit Edison Company. To me, they stood then and they still stand, after I have examined over many years the policies of leading companies in many industries, as a symbol of business foresight, of wise, public-spirited, forward-looking business enterprise. Naturally, gentlemen, one with that background could readily understand why members of the electric power industry would be interested in the work of the Committee for Economic Development.

Since that time, when a young Westinghouse cub learned from a power company something of business foresight, a lot of water has gone over the dam. Billions of gallons of it have gone over your dams; hundreds of billions of kilowatt-hours of energy have gone out over your systems to help remake the face of the earth. Perhaps a few important lessons out of those tumultuous 18 years may be helpful to business as it moves through the fog of war and on into a new world.

From the boom of the '20's and the subsequent collapse, we all learned the vulnerability of our economy to mass errors in judgment; that is, to business booms. We all learned, perhaps, the great need for an extension of business foresight. Out of the doldrums that followed, in the '30's, we learned something of the risks of mass unemployment. We learned that when too many people are out of work too long, we have unrest, we have a move towards collectivism. More recently, from our war boom, we have learned the insatiable demands of people when they do have jobs. The old bogey that this is a mature economy with no growth left has certainly been dispelled, and I hope forever. People will buy if they have the jobs and have the money.

Having learned these lessons, business faces a confusing and probably a very dramatic future. It is certain that the end of this war will confront America's free enterprise system, and the individual businesses that make it up, with great responsibility and with unparalleled opportunities.

What are some of the facts that business must deal with in looking into that future? First, it seems most probable that the American people will reach the end of the war with fat savings—that their pocketbooks and their bank accounts will be full; but with bare shelves—with bare consumers' closets, with bare shelves in the stores, and with bare stockrooms in industry. That may point to a great boom in business, but it may also lead during that period to a time of confusion and social unrest. Can't we see that under those conditions, there is a call for advanced planning in business now, in order that we may shorten the period of transition after the war and smooth it out, so that we shall move quickly into a peacetime economy with as little unrest and as few complications as possible?

During and beyond that transition period, there is one great imperative that faces the people of this country, in all walks of life and particularly in business. I speak of the insistent demand of the people for jobs. Your President has spoken of big figures. I heard recently a remark by a man from the University of Chicago which seems to me to put that philosophy in its most effective light. He remarked on a recent occasion, "Well, a billion here and a billion there does run up into money after a while, doesn't it?"

Well, so it goes; but this is a big country and when we are trying to take the measure of this country of ours, we have to deal in big figures. The United States Department of Commerce has estimated that by 1946, in a peacetime economy, we might expect as many as 59 million people to be able and willing to work. That would be a reduction from the wartime total. If you allow about two million of those in the armed services—and your guess is as good as anybody else's on that—and if you allow another two million to represent a practical working minimum of peacetime unemployment, you still find that the labor capacity of the country in civilian employment would be upwards of 55 million people, able and willing to work. That is at least nine million more than were working in 1940.

The Department of Commerce has also estimated that due to increases in productivity during this period, the capacity output of the country, if those 55 millions were employed, would be about 45 per cent greater than it was in 1940. If you want the figures, they estimate that at constant prices, the output would be 142 billion dollars as compared with 97 in 1940. Increases of that magnitude in the labor force and in its potential productivity represent great opportunities and great responsibilities for business.

Now, the problems of getting such production, of course, are greatly intensified by the fact that we have had to tear up this whole country by the roots and remake it into a wartime economy. Our present economy is a fantastic distortion of our accustomed manner of working and living. It bears very little relation to what we would have or

would want again in peacetime. As you know, business has one customer today that takes on the order of half its total output. When the war is over, that customer's demands will shrink very drastically and that customer will have to be replaced by millions of others.

In addition to that, we have had great shifts in employment, from city to city, from job to job, and in particular we have had the practical destruction of the selling organizations in many industries; so that business, facing this opportunity and this responsibility for production and employment after the war, does so from a base which itself offers plenty of difficulty.

Frankly, it seems to me that as anybody—any citizen or any enterpriser—contemplates the vast drama that is likely to unroll itself after the war ends, and contemplates his own part in it, he must necessarily be humble about it. Nevertheless, the job remains to be done.

Last autumn, not very many months ago, this great drama of our country called to its stage a new character, the Committee for Economic Development. As this infant has grown into a lusty adult, many of you have no doubt heard of it. What is this committee and why is it? The Committee for Economic Development is a group of business executives and business leaders who have joined themeslves together to stimulate American businesses to put themselves in a position to provide as many *productive* jobs in business after the war as they can. Specifically, the Committee is a private, non-profit corporation, led by Mr. Paul Hoffman, the President of the Studebaker Corporation, and by a board of trustees who also are enterprising, public-spirited and forward-looking businessmen.

The committee was set up on the invitation of Secretary Jesse Jones, but on his advice, it was made completely independent of government. Its trustees elect their own successors and it gets all its funds from private concerns. It is wholly independent of government and of other organizations.

How does that committee propose to help business? That is a large order, isn't it? Is it a national planning organization? Most certainly not. The very idea that a single committee could do the planning for American business is fantastic. The members of the Committee for Economic Development are not that presumptuous; in fact, the committee is not a planning organization at all. It is, if you wish, a catalytic agent, a stimulant, a thought-starter.

Turn for a moment, if you will, to the situation that business faces as it looks to the peace. When you recall, as all of us must have, many times, the great forces that will be set loose, the great movements that will take place in population, in employment and in production, you will appreciate that an individual concern, attempting to "go it" alone and to plan boldly without regard to what is happening in the rest of the economy, would face a great and perhaps a prohibitive risk. But this risk to the individual concern will shrink if the three million enterprises in this country will concurrently set their sights on a common target of business expansion and business opportunity. If that can take place, each can gain confidence from the knowledge that the others are thinking of the same goal that he has in mind.

Looking beyond the immediate conversion period, we know that the task of maintaining over a period of time a high rate of production, a high level of productivity and a high rate of employment, will require not merely the efforts of business alone, but positive and constructive collaboration by all groups in the community. Specifically, it will call for a body of public policy that favors business expansion, that favors a dynamic and expanding economy, that favors the creation of employment in private business.

The Committee for Economic Development has one objective and an approach to sell in this country. Mind you, we have no authority, we are not representative of other organizations; we are just a private group attempting to perform a public service by selling an objective and an approach. The goal, the objective, is jobs, productive jobs, jobs in private business.

The approach we have is twofold: first, to stimulate planning of products and marketing by our three million individual business enterprises in this country. You all know that of those three million, most of them are small. Frankly, our committee is more concerned that the small and medium sized companies shall begin to plan than that the large ones shall; because we know the large ones will do it on their own initiative, anyway. The second part of our approach is to work towards the creation of a climate favorable to business expansion, favorable to the creation of jobs in private business.

Those are the purposes for which the Committee of Economic Development exists. How do we go at them? In order to stimulate planning by business concerns all over this great country, we go straight to the grass roots, to the cities where these enterprisers live and work. We undertake to set up in each locality a community committee of local business leaders, and the purpose of each local committee, like that of the national organization, is to help the individual enterprisers in their community to get their own planning under way now.

We have found, in order to do that, it is necessary to develop a rather simple first step, to bring this so-called post-war planning out of the stratosphere and right down to earth. Accordingly, each of our local committees, after it is formed, makes arrangements to contact employers in the community—in the beginning, industrial employers, later on, trade and service employers—and to put up to them a series of four simple questions. The first—who is the man in your company whom you have made responsible for your preparations for peacetime business? We would like to know his name. We, your neighbors, would like to know, because we will have material for him, to help him. We would like to know who he is. The second question and the third relate to employment. How many have you on your payroll now? How many had you in 1940? And, finally, how many are you prepared now to say that you could employ in your business when the war ends or shortly after the war ends, if you could assume generally good business in the country?

Now, gentlemen, that last question is not asked because the Committee for Economic Development needs those figures. Frankly, the national organization would never need to know them. It is asked because the individual employer himself needs to think about what that means, and the people in the community need to think about it. We know that it is impossible to give a good answer to that in a hurry, but we also know that, difficult as the answer may be, sooner or later each employer will have to find it, not for us, not even for the local committee, but for himself. We have found in practice that when businessmen, after the normal objections they might raise at the start, do begin to try to calculate their business prospects and

relate them to the number of people that they might be able to provide with productive jobs. Once they have been pushed off the deep end, they are in this business of serious preparation for the postwar period permanently. They are in because they see then that the problem is theirs, that it is a matter for them to deal with, and that it is one they cannot escape. We are following that approach in town after town, city after city, all over the country.

In order to help the indivdual employers who perhaps have been too busy with the war to think much along these lines, we are providing various types of material. We have a handbook full of a lot of questions that the employer can ask himself about his business that will help him to determine how he can plan boldly and aggressively. We have an industrial advisory board of some of the most forward-looking planning executives in leading companies to help us in developing more material which can be passed to the people throughout the country. That is under the chairmanship of David Prince of General Electric. It has a number of other eminently capable men on it. I see one of them in the room here, Mr. Tom Walker. We hope, through that board, to develop, partly ourselves and partly through other organizations, a great deal of material which will be of help to individual companies and which will be coming along during the months ahead. Some of you may have heard of a new publication by the Department of Commerce called, "Markets After the War." That was prepared on our suggestion to give a more tangible picture of market opportunities than many businesses have had.

We are undertaking, through a committee of some of the country's best marketing specialists, to carry forward the work on markets in that publication—to reduce the hypothetical projections that the Department's people put out to practical working estimates of market possibilities. When, as, and if we have material of that kind available, that also will be passed out freely through our community committees.

The important thing to remember in our philosophy as it affects these community committees is that they belong to the local people; they are theirs; the responsibility for what happens to their communities, what happens to their businesses, is theirs. Theirs is not the responsibility of the National Committee for Economic Development. We have no control over them. We exist only to help them on their way.

Specifically, we have about three hundred committees started now. We may have as many as a thousand or fifteen hundred by the end of the year. Our goal is a local CED committee in every industrial community in the country. I might say in passing that these committees work very closely with existing local organizations and make the maximum possible use of their facilities. I am speaking there of Chambers of Commerce, local manufacturers' groups and others.

So much for our field program of stimulating individual planning. What about this climate for business expansion? You don't have to exercise much imagination to bear in mind that underlying all business operations is a great and complicated matrix of public policy, which determines the limits within which one can operate. It has a great bearing, we think, on the ability of business to provide all the jobs that it should after the war. Our aim is not to pass resolutions as a committee, but through research and invention, to develop the basic principles on which public policy should be oriented if we are to have a dynamic, expanding economy with free enterprise playing its full part. Let me give you some examples of that.

Let us turn to first things first. Public policies in force now and during the transition period will have a great and lasting effect on the position of enterprise in business. Take the question of the termination of war contracts; if we have $75 millions in contracts in force at the end of the war, to be cancelled, it will be of paramount importance not only that the terms of settlement of those contracts shall be fair both to the public and the contractors, but that that settlement shall be speedy, so that these employers, these contractors, can get their money and start to work on reconversion. We have research people working on that problem.

Another problem of equally great importance has to do with the liquidation of wartime controls, of the limitation and conversion orders and of price and rationing and inventory controls. It seems fairly obvious that when an economy has operated for a considerable length of time under such controls, if they were to be removed suddenly, instantaneously, we might have a great deal of confusion developing; and yet, it is also, I think, equally obvious that the American people do not want to look forward to the unthinking continuation of all these controls after the war. Therefore, we have put a very capable social scientist to work on the problem of a program of orderly liquidation of wartime controls.

I don't know what his answers will be, but we feel that the controls must be liquidated over a period of time, and that should be done in an orderly manner. Therefore, we put a man to work to see how that might be done.

Those are two examples out of quite a number that we are tackling in the transition period.

Now, going to something in the longer-run future and even more basic, perhaps, we all know that we will not get a dynamic, expanding economy through our business system if we do not have adequate incentives to expansion. We also suspect that there have been great deterrents acting to vitiate those incentives in the past. We know—well, let me quote Professor Sumner Slichter of Harvard, who is the chairman of our Research Advisory Board. He has said on a number of occasions that if an enemy of a free society had been imported here for the specific purpose of developing a tax program to destroy initiative, he could not have done a much better job than we have done by guess and by gosh over the last 40 years with our federal, state and local systems here. Now, whether or not that is an exaggeration, I don't know, and I think perhaps he would claim it was said that way for the sake of emphasis; but whatever the case, as a part of our research program, we are undertaking a broad study of the problem of adequate incentives and in that will be a particular emphasis on the possibilities of a tax structure which would be stimulating to business initiative rather than otherwise. I say the possibilities; we don't know what the answers will be.

Those are just a few examples of the sort of thing that we are shooting at.

We have developed, I think, what is a unique tool for working out this program in the field of business climate. I will describe it very briefly to you. It is called our Research Division. It is headed by a group of businessmen under the leadership of Ralph Flanders of Springfield, Vermont, a man whom Paul Hoffman frequently refers to as a Vermonter with vision, an extraordinarily effective combination; also on that committee are a number of other men, picked

because they are thoughtful, because they understand the problems of business and its relations to the public. I might mention Eric Johnston, Thomas Lamont, Sr., William Batt, Mr. Hoffman himself, and several others of equal stature.

These men determine what problems shall be tackled in our research program and the order in which they shall be taken up. The work itself is turned over to a group of eminent social scientists. We want this work of ours to stand in the eyes of the public and of business as an objective research program. We know that any group of businessmen who, on their own initiative, put forward anything, would be immediately suspected of being special pleaders; so also would any group of experts from the Government. We can turn only to the men who stand in their professions as social scientists, and that means turning primarily to the universities. I won't bore you with the details, but Professor Yntema of the University of Chicago is our research director, with us on full time. He has working with him an advisory board under the chairmanship of Professor Slichter of Harvard, which also includes prominent social scientists from other universities.

The actual program is developed by this group and then it is carried out by men of similar calibre in the universities; for example, our work on the liquidation of wartime controls is being carried on by Professor John M. Clark of Columbia University, who is known among economists as probably the dean of all American economists; if not the dean, then, as they sometimes call him, the economists' economist. He has spent his life in this subject of control.

These economists do not work in a vacuum. In practice, our business group and our scientists meet together frequently for prolonged and detailed exploration of the subjects. So far, we have met every two months since the organization was set up, for sessions lasting two to three full days, and there is developing in that group a most complete interchange between the businessmen and the social scientists, so that each is learning from the other, and we believe that we are developing a consciousness of the problems of public policy that affect business climate, which will show itself when our work comes out.

Our first research reports will probably begin to come out at the end of this year. After that, there should be a fairly steady flow of them, and there are many others that are contemplated to be started some time, besides some already started that I won't take the time to mention here.

That is the CED program related to the climate for business expansion. Now, what about the electric power industry and its relation to these objectives of the Committee for Economic Development? First, our committee congratulates your Institute on its early establishment of a strong post-war planning committee. One of our main objectives is to encourage every industry to set up strong post-war planning committees. We know that we are not capable ourselves of dealing with the problems of individual industries. The people in the industries will have to do those things for themselves.

Just the little discussion I have heard since coming in here this afternoon reminds me again that the electrical industry is eminently capable of thinking through its problems and of developing its own positive and aggressive approach to the future. From experience to date, it is quite evident that your electric service companies have a very special and intimate relation to our local committees for economic development. The record so far shows that an increasing number of our members throughout the country are coming from your industry. I will mention only a few, only a part of those who have already joined us. Among them, Dr. McClellan of St. Louis, who is our district chairman there; Mr. Kinsey Robinson, from the State of Washington, who is our district chairman out there; Mr. Paterson of New Orleans, our district chairman for Louisiana; Mr. Wolfe of the Baltimore Consolidated Gas Company, who is in charge of the Research Division of the committee in Baltimore itself. Those are just a few picked at random. There are many more who are playing equally important parts in the work of our local committees, and I am sure that as our committees extend out through the country, this number will keep on increasing. That, of course, in the individual situation, is up to the people in the community. It depends on the interest of your local people and on their relations to the people in the community.

There is one special field that I think we will find your members engaging in increasingly. That is with our so-called local research divisions. In our local committees, the research division is the group that carries on a great deal of the planning of the work of the committee, which lines up the information, the local information, that will be helpful to local business concerns in their planning and so forth.

Now, you people in the electric power industry, of course, have a unique knowledge and understanding of the economies of your communities, and you have a unique and lasting interest in the development of those communities. I think you can be of the greatest possible service in every community where you have plants, if you will work with the local CED committee. You have a breadth of view and understanding there that no industrialist is likely to have, so I hope that we can count on increasing collaboration throughout the country.

Before I came up here, I asked one of my very good friends for some suggestions about what the industry would like to hear. He said, to quote him literally, that he thought you would like to have held out to you some hope for the industry to cling to, for the future of free enterprise. Gentlemen, I think he spoke in an allegory. Surely, you, with your record of rapid and long-continued and practically uninterrupted expansion, do not want such timid counsel as that. You know that the people of this country want jobs, that they are willing to work. You know now, and I think we all know, that when they have jobs, they will buy. You know that load-building electrical appliances will stay very high in the order of preference of these consumers. You know, I think, and you will see increasing evidence of it, that businesses all over the country, in community after community, are moving rapidly toward making bold and aggressive plans for expansion of their peacetime operations.

I hope I have given you some confidence that a groundwork for a proper climate, for a dynamic economy, is now being laid through CED. Gentlemen, you have charge of what is probably mankind's greatest implement of progress. You have developed strong, able and forward-looking organizations to use that tool and to carry it forward. The future, they say, belongs to the bold. Surely, you in the power industry will be bold in carving out your share of that future, bold in meeting your responsibilities for providing jobs, and, above all, bold in providing more and more and better and better service at a lower cost to your customers.

Aims and Aspirations of NAM

By Noel Sargent
National Association of Manufacturers

An address before the 11th Annual Meeting of the Edison Electric Institute, New York, June 3, 1943

THE National Association of Manufacturers has just two main aspirations for the manufacturing industry. The first is an all-out effort to win the war, and the second is an all-out effort to win the peace after the war. Now, there are some who tell us that it is a mistake to think about the period following the war. I attended a session on post-war problems at New York University recently, and a gentleman who had spoken at the session just previously, in the course of discussion following the remarks of the then speaker, said that he did not see any reason why a group of educators or anyone else should be concerning themselves with the period after the war, that it was just like Nero fiddling while Rome burned.

Well, I am not quite as pessimistic about our ability to win the war as that gentleman and others who take that philosophy apparently are. I think it is extremely important that every businessman consider what he would do in his own operations if the war ended tomorrow, because wars do have a way of ending suddenly. We can think ahead and think it may be months, at any stage, but wars end very suddenly and not when expected; so that advance preparation for such a period is indeed essential.

The public, moreover, believes that industry, your association and ours and individual members, should do something about this. Ninety-two per cent of the public in a recent poll said that they thought we should be preparing now for the post-war problems, and 75 per cent of those who thought so said that industry should now be trying to develop new and better products for the post-war period.

As to the specific post-war goals that we think ought to be advocated by industry and are advocated by our Association, they are these: The preservation of the rights, freedoms and opportunities which are guaranteed by the Constitution of the United States; the right of each American to receive pay and profits based on performance; a prosperous and self-reliant agriculture, because, Mr. Chairman, if you speak of manufacturing as a primary industry, agriculture might be said to be even more so; steady employment in free private enterprise for all who are able and willing to work; a chance for people to save some money; an incentive for people to invest their savings in private industry; and, what we think would be the result of all of those, progressively higher standards of living for the American people.

Those are the broad goals that we think should be aimed at by industry for the post-war period. There are three main things essential to secure these goals, as we see it. The first is a basic public understanding of the principles of progress; second, sound business policies and acts; and, third, sound governmental policies and acts.

Now, each of those ramifies into many, many fields and has many, many subdivisions. We think it is impossible, even if business wanted to do what it could and if Government tried to do what it could —some governmental people at any rate—to get the results we should, unless there are basic public understandings of a sound character.

Among these we believe to be the following: A belief on the part of the public that freedom of enterprise and freedom of religion, freedom of the press, freedom of speech and freedom of the right to vote for public officials are all tied up together, and that if you attack any one of them, you inevitably endanger the others, and those who believe in one must believe in the others, or they are all in danger. There must be a public understanding that government is created for the benefit of individuals; that it is to serve and not be the master of the people, and that if we are fighting a philosophy in foreign governments that the state is the master of the people, we ourselves should be very cautious not to adopt it when the war is over.

There should be a public understanding that the United States Constitution is the best device yet found in the field of political science for reconciling two basically conflicting doctrines, namely, the right of government by majority and the necessity of protection of minorities. And in that connection, there perhaps should also be a public understanding that if we are to have amendments to the Constitution, if the public really desires them, it should be done in the way provided in the Constitution itself and not by legislative, executive or judicial fiat.

The public should understand further that increased living standards are only possible out of increased production of goods and services, and that free enterprise is the best way to get such increased production. I understand, Mr. Chairman, that in a notable address this morning, Mr. Mullendore expressed very fully and succinctly and far better certainly than I could possibly do, the intrinsic merits and aims of free enterprise and the necessity for its preservation in the post-war period.

And, finally, the public should understand that economic progress must be based on a relationship between reward and accomplishment—pay according to performance. Now, there are many, many other aspects of public understanding that ought to exist, but these, it seems to me, are the basic ones which must exist if we are to have progress in the post-war period.

As to some of the business actions necessary to accomplish the post-war goals, business always does planning ahead; at least, every business that succeeds does, and some that fail, do. But no successful business has gotten along without doing some planning ahead, so that people who say that "industry should suddenly change its attitude and plan ahead now" are apparently not conscious of the fact that business generally does do such planning, but the difference is that present conditions require even more flexible thinking than usual in planning for the future. Each company and every industry should plan now for what it will do after hostilities end; what old products and what new products will it make, how will it sell its products, how many jobs can it provide?

Ten thousand efforts of enterprisers growing from the bottom and executed enthusiastically by the people who make the plans, through the initiative of those people who started them, will more securely, in our opinion, promote post-war prosperity than one big master plan for everybody, since any such master plan would have to be put into practice by those who had no voice in its formula-

tion and because the risk in human judgment is thus enormously increased. If one big plan is wrong, everybody suffers. If a few of the 10,000 plans are wrong, there is no great social loss.

Industry should likewise continually increase the benefits of the free enterprise system to the American people, and industry should explain the operations of that free enterprise system to the American people so they will know that it can benefit them better than any other economic system. This means that there must be continued efforts in industry to increase efficiency, to make better goods at less cost, to lower the unit costs of production, to lower distribution and service costs. That is the record of the last hundred years. That record must be continued.

Now, what about Government actions to make the goals obtainable that we desire for the post-war period? Together with public understandings of a direct character such as I have mentioned, the Government action provides the economic climate in which your industry and all other industries must operate, and if you do not have such a sound economic climate, you are not going to have progress and the development of free interprise.

We believe, as a starter, that the Government should state now, and live up to it in the future, that free enterprise —labor, management and investors— will be the main source of productive employment in the post-war years. Just as the Government has used top-notch businessmen to solve the problems of production during the war, we believe likewise that the Government should use top-notch businessmen instead of $2,400-a-year clerks to solve the problems of the transition period and the conversion back to a peaceful life for industry and the people of the United States.

We believe there should be sound post-war tax policies on the part of the Government; a substantial reduction of the 20 per cent to 90 per cent burden of taxes, which every individual in the United States must bear. There must continue to be at that time a large number of people making tax payments and knowing they are making them. There should be allowances and reductions for investment in new enterprises and on earnings spent for new construction and expansion; depreciation policies which will accelerate the introduction of new and better machinery into industry.

I noticed only today a table gathered by the *American Machinist,* showing, as of 1940, the percentage of tools and equipment in American industry at that time over 10 years of age, and it is a distressing picture. We believe that by proper depreciation policies, with our tax laws permitting such policies, we could bring new and up-to-date machinery and tools into operation quicker.

Unreasonable restriction on capital markets and security exchanges should be removed; there should be sound labor policies; and we believe that the Government must repudiate this National Resources Planning Board-Alvin Hansen philosophy, that it doesn't make any difference how big the post-war debt gets because we only owe it to each other, and since we are only shuffling the money back and forth between each other, we don't need to worry about the size of the public debt. We believe that philosophy must be abandoned by the Government if we are going to have the kind of prosperity we should in the post-war years.

We believe also that the Government must realize that the United States is not an isolated nation after the war is over but that there must be cooperation with other nations, to lessen international friction. By enabling us to devote more time to producing things for better living standards, we can then devote less time to producing the weapons of war and destruction, and as a consequence, be able to increase the living standards and progress of the people of the United States.

I mentioned that one of the things that private industry must do was to increase the benefits of free enterprise to the public. I am going to take a few minutes to tell you some of the ways in which we in the main have been endeavoring to promote and increase such benefits. First, in specific fields: We issued last year to top industrial executives of the United States a list of things which should be considered in their companies and checked off by them to see what they were doing to get in preparation, as of 1942, for the post-war years, and that had extremely wide usefulness. We have furnished similar check lists to top industrial executives as to employment principles, which they can check in their own companies to see whether the best employment practices are being followed, and similar check lists on their relations with their supervisors, a subject which, as you know, is extremely important because of the efforts which are frequently being made to unionize the foremen in industry.

In all of those activities, we simply did not sit down at some desks in New York and devise these check lists and mail them to our members. We had the benefit of some 60 of the leading employment relations experts of the Middle West and the East in devising and checking over, first, what they considered to be the best employment practices which should exist in industry. We have held employment relations institutes twice a year, in which we have limited attendance to 150 employment relations men from industry, in which they sit down for a week or two weeks and go to school, to discuss with others, with some of the best industrial relations executives in the country as leaders, some of the methods being followed in employment relations.

In the field of healthful working conditions, we have endeavored to point out to industry the ways in which working conditions could be improved and the health of workers improved. We have had as our consultant in that and as our chief guide, Dr. Victor Heiser, the author of "An American Doctor's Odyssey," and we held a number of clinics throughout the country, bringing to industrial management throughout the United States the lessons and best practices being followed in the field of healthful working conditions.

We have established a management principles commission, which is intended to bring to management its discussions of the best managerial policies to be followed in other fields than those I have mentioned.

We have, in addition, the regular activities of the Association. We have our Government Finance Committee, which deals with the problems of taxation. We have our Government Relation to Industry Committee, which develops basic positions on such matters as the Guffey Coal Act and the Securities Exchange Acts. We have our Economic Security Committee, which is studying continually the Social Security Acts of this country and proposals such as the Beveridge Plan which have been made—and I noticed that the author of that plan was at luncheon in the hotel here today. And then we have, in the field of industrial relations, in addition to the items I mentioned, studies continually made of the problems of negotiations with employees, and our bulletins on the problems of labor relations.

As a result of the war, we have had to

develop, naturally, some new activities. We have a War Committee, which has been extremely active in studying all of the problems connected with war production, priorities and Government rulings and regulations of all sorts, and the Civilian Industries Committee, which studies the problems of those corporations which cannot get into war production but have problems, nevertheless.

And then, also growing out of the war, we have our post-war activities. Although the war did not start until 1939, these activities on our part, strange as it may seem, had their growth beginning in 1936. At that time, a number of our directors said that it was up to industry to make a serious study of the causes of depressions and make suggestions for the prevention or at least alleviation of depressions, because if another big depression came on and industry had no ideas as to what should be done about it, industry as a whole would suffer mightily in the field of public opinion; so we began in 1936 to study the causes of depression.

We issued a number of reports and studies from then until 1939. When the war came on it was obvious that one of the big problems which might exist after the war was the question of what was going to happen then, whether or not there would be a depression, so that our activity, naturally, merged into a study of post-war problems. At the present time, our post-war activity is divided into three main fields: first, we have a Committee on Corporation Peace-time Planning, which is, as its name indicates, to study the methods and problems of internal company operation and planning for the post-war years.

In addition to last year's document I mentioned on check lists of things which companies should investigate for the post-war period, we very recently issued a booklet for industrial executives on peacetime plans of industrial companies, surveying what a large number of companies are doing in that very field, how they are setting up their studies, what different aspects they are studying, and all of that sort of thing.

Then we have our Post-War Committee, headed by Mr. Wilfred Sykes, the president of the Inland Steel Company, which is divided into three main divisions. First, we have a committee on the transition period, which is studying the problems which will exist in the period immediately following the closing of hostilities. Then, that work is divided in turn into three main divisions. One of the groups is studying the problems of gradual demobilization, the problem of public works and construction in the period immediately following the termination of hostilities, and the question of an incentive plan of taxation, as to whether that has any possibilities for the immediate post-hostility period.

The second group of our transition period subcommittee is studying the problem of war controls; how fast and how quickly should they be eliminated after hostilities end? And a third division is studying two other extremely important topics, the question of cancellation of contracts when hostilities end, and the kind of contractual relationships which should exist between manufacturers and the Government as of that period, and the disposition which should be made of Government-owned plants and equipment acquired for war purposes, when the war is over.

Upon all of these aspects, we expect in the next few months to complete our studies and to make recommendations and public statements thereon.

Then, we have an International Relations subcommittee. One division of that is studying certain specific topics, such as the Reciprocal Trade Agreement Act, upon which it made recommendations to Congress. The other division is studying the general principles of international relations. It is studying such problems as economic nationalism as the cause of international friction, access to raw materials, and a wide variety of related topics, which we believe are extremely important in their post-war application, both to the industrialists of the United States and to the possibility of maintaining peace in the post-war years thus enabling us to go ahead with free enterprise and its public benefits here at home.

Then we have an Economics Principles Commission, which was established a couple of years ago, and that commission is preparing 21 analyses or chapters of various aspects of the nature of the free enterprise system and its achievements and its problems. Among those which relate to the post-war period, and these will be published in October, I think, are: a lengthy chapter on business fluctuations and their causes and methods of alleviation; Government spending, going into this question of the Government debt philosophy that I mentioned; and proposals for abandonment and modification of the free enterprise system.

In our study on all of those subjects, which has been going on for some two years, we have the benefit of consideration by a group equally divided between business executives and economists, and the economists are evenly divided between some who are connected with academic institutions and some who are connected with industrial corporations, so that we get a fine mixture of judgment and experience upon all of these problems.

Now, how do we go about it to try to sell the benefits of free enterprise to the American public? Well, there, too, we have a program built up over many years. It is obviously difficult to improvise and develop new programs and methods all at once, although we try to take advantage of every chance which is offered; as a matter of fact, when we were subject to several months of investigation by the La Follette Committee of the Senate Education and Labor Committee a few years ago, Senator La Follette, in the course of his remarks, said, "Well, I guess you people use every method of public relations except carrier pigeons."

There are two things that we try to do in that connection: one is to express the positions of industry to the representatives of the public in Washington, and the second is to express the views and benefits of private industry to the public itself. Now, in connection with the public representatives, public agents, in Washington, we maintain a Washington office, of course, which is in daily contact with Congressional groups. We have special meetings of our officers with members of Congress, and we make numerous appearances before committees of Congress to express the viewpoints of industry.

As to the public itself, we have established certain special committees which cooperate with specific groups. We have a committee, for example, which cooperates with agriculture and which holds several conferences a year at leading agricultural institutions where we get together groups of business executives and groups of farm people, and we discuss, we ask them the questions they are interested in and we give them industrial management's viewpoint. We have the same sort of relationship with the churches through a special committee we have established, and hold in a number of communities each year conferences with church executives, with ministers, and industrial executives. We endeavor

to get these started on a basis that they will carry through; we endeavor to start them in a community, get them started, and then hope we can go and leave them alone and they will have continued, repeated conferences between local church people and business people, because we, obviously, cannot maintain an actual supervision and activity in every community of the United States every month.

We do the same thing with educators through a special committee we have, endeavoring to get together groups of businessmen and educators of the community, and endeavor to set those up so that they will become self-functioning in their communities.

We have radio broadcasts; we have weekly broadcasts to a million here at home and we have a weekly short-wave broadcast to soldiers overseas, each week by a prominent industrialist, setting forth what the industrialists of the country, particularly the industry involved, are doing for the war effort and what they are hoping to do for the post-war effort, for the returning soldiers of the country and their families; and we have a special service to the commentators on 524 radio stations which goes to them each week.

With respect to the newspapers, we have frequent "spot" releases to 2000 metropolitan papers, and we have a weekly press service to 8000 grass-roots papers with a combined weekly circulation of 40,000,000. We use motion pictures. Last year, our motion picture, "American Anniversary," had showings to 10,000,000 people. We have a speakers bureau, which, last year, had 1000 bookings, and it is going at a higher rate this year.

Then, we have booklets and literature for special distribution to schools and to various other groups, that we prepare.

As to the basic ideas which we use in this public information program and which we seek to develop for the benefit of free enterprise and the American public—we advance the concept that the risk taking, willingness to venture, to better oneself, ambition, should be the keystone of the American economic system, that it can provide greater security (when that word is properly interpreted) than any static or controlled economy which emphasizes economic safety to the detriment of production and progress; that if it is given a chance, free competitive industry offers the greatest opportunity to the individual to satisfy his wants, to realize his fullest potentiality and to have the greatest amount of free choice.

I am reminded in that connection of one of the speakers at this New York University series that I attended recently. The chief research analyst for the CIO said that in his opinion, the time had probably come when the Government would have to determine how individuals in the post-war years could spend their private income. I don't know whether or not that philosophy will prevail, but if the individuals of the United States are deprived of free choice to determine how they want to spend their incomes and how much they want to save and how they want to invest their savings, then, of course, the principles of free enterprise will be gone.

In our public information program, we endeavor to point out that industrial management is not indifferent to the problems of employment and security in the post-war period, but that it is planning independently and intensively to employ, to produce and thus to advance our nation's welfare to new heights when the war is over; that industry is not seeking a completely laissez faire economy, but that there is a vital distinction which the public must make between government regulation, which is proper, and government control, which is not, and that businessmen, you gentlemen, are as honest, as sincere and as socially conscious as any other group of public servants, because you can survive in business only as long as you rightly serve the public. Those who talk of production for use instead of profit, neglect the fact that profits are the measuring stick to determine whether the product made has been of any use to its potential users.

In all of these ways, Mr. Chairman, the National Association of Manufacturers is trying to do its full share for the free enterprise of which you and all our members are a part, so that both now and in the post-war years, it can enable the United States to resume the march of progress which was interrupted in the '30's for the only decade in our history. Thank you!

Saving Small Industry as Future Customers

(*Continued from page* 202)

ganizations, but self-interest should indicate to utilities the importance of its membership therein.

Organization

The utility can, during this period, in so far as it is practical, accumulate and disseminate to its small industries now and immediately after the peace, every possible bit of information to guide them in their present and future manufacturing programs. The Power and Heating Committee of the Edison Electric Institute is well fitted to do this job if they will act forcefully.

It would seem practical for each operating company or for each of its divisions to appoint one particular member of its organization to direct its small industries activities. I personally know of no better qualified personnel than that of the Commercial and Industrial Departments of the operating companies. As I have mentioned, General Johnson, himself, has told me that the assistance he has received from utilities has been of the greatest help and that he considers them better fitted than any one else to supply pertinent information on small plants.

When I began this talk, I indicated that in the days when our young industry was even younger, power engineers were converting other industries to a form of power new to them. They were pioneers in the application of electricity to industrial operations. There was no formula—and often no precedent to follow. Then it was necessary to resolve each individual case on its merits and through the ingenuity of power engineers. Now, with the world turned upside down by war, again there can be no formula to save these essential small industries, other than the initiative of their own managements and the ingenuity of our power engineers.

I can only urge you to find the man in your own organization who can do the job, and to support him to the limit of your ability.

Your Stake in Heavy Apparatus Standardization

By H. V. Erben

Manager, Central Station Divisions, General Electric Company

An address before the 11th Annual Meeting of the Edison Electric Institute, New York City, June 3, 1943

I AM here this morning to talk about an idea.

It is a rather obvious and simple idea—but one which is easier to suggest than to put into practice.

If, as we hope, this idea proves workable and of value to the electric light and power companies, it will come about through that same sound planning and foresight which prompted them to design their systems so securely and so adequately that they have been able to take the war-time peaks and loads in their stride.

That they have been able to do this—without rationing or increased cost to users—without relaxing their high standard of service—and with minimum call on scarce materials needed for the rest of the war program—stands out as one of the brightest achievements on the home front.

But when the war is over, neither your industry nor ours will be decorated, or even remembered for its splendid performance; nor will either return to the same economic or business conditions that previously existed.

Many of us are facing increased competition from new entrants into our various fields, and from new conditions growing out of the war. It has also been apparent for some time that the electric light and power business is acquiring definitely competitive aspects, and undoubtedly this trend is being accelerated.

Thus, the utilities may find themselves in the paradoxical position of a closely regulated business faced with competition both keen and difficult to cope with. At the recent EEI Technical Meetings in Chicago, Mr. B. M. Jones of the Duquesne Light Company expressed it this way: "Real competition will exist, and it will be keen and aggressive, and will have advantages in many ways. So let's recognize what we are facing and get ready to meet it."

Low costs—costs to meet this competition—will become increasingly important. But how to lower them, is the question! Taxes will undoubtedly continue to take a large portion of income; the cost of fuel shows little indication of declining; and there is no reason to expect that labor will be content to accept any appreciable lowering in its wartime level of compensation.

However, one of the important items over which the power companies have a considerable degree of control is their capital investment in generation, transmission and distribution equipment. The cost of this equipment constitutes a substantial part of their total investment on which taxes must be paid and earnings made, and in addition, it affects their depreciation and maintenance charges. Hence, I would not be surprised if after the war, considerable pressure were brought to bear on the electrical equipment manufacturers for lower prices on capital items such as turbines, transformers, switchgear, circuit breakers and the like.

Unfortunately, however, the electrical manufacturers may find it difficult to offer lower prices on heavy apparatus, if design and manufacture continue along pre-war lines. According to the Bureau of Labor Statistics, average hourly earnings have already increased almost 15 per cent since 1941, the last pre-war year. While the heavy war volume has temporarily offset this increase, production on the present scale cannot be counted upon to continue when peace is restored and business returns to its post-war level.

Thus, we may be faced with a dilemma—a need on the part of power companies for *lower* prices on heavy electrical apparatus to meet the changing conditions—and an opposing need on the part of the electrical manufacturers for higher prices to meet increased cost of production.

Is it not possible that one answer to these conflicting needs can be found in the lessons now being learned in the production of heavy equipment on a mass scale for war? You are all familiar with the savings in cost and improvements in quality which have resulted from the mass production of consumer items and smaller types of apparatus. In your field and ours alone, many millions of dollars have been saved and countless problems solved by standardization of such items as lamps, lamp bases, wiring devices, and appliances. With your help, mass production was also extended into the small types of apparatus resulting in reductions in cost and improvement in quality of distribution transformers, capacitors, meters, and small breakers—just to name a few.

Of course, efforts have also been made to bring about standardization in the heavy apparatus field through joint action by the power companies and manufacturers. Under the direction of a committee representing EEI, AEIC and NEMA, a program of simplification on power circuit breakers was undertaken some 15 years ago. In 1928, more than 300 breakers of the outdoor type alone, were listed by the manufacturers and used by power companies. Through the work of this committee, which still continues, the number of outdoor ratings has now been reduced to less than 50. Unfortunately, during the period required to bring this about, the effect of standardization on circuit breaker price levels was to some extent neutralized by a decrease in the volume of business.

Other attempts have been made to standardize heavy electrical apparatus of the kind in which power companies are interested—*but it has taken the tremendous production pressure of a world struggle to demonstrate beyond all reasonable doubt the cost savings which result from mass repetitive manufacture.*

The almost incredible effect of war production volume on manufacturing efficiency is now apparent in our every-day operations. Many of the items which could be cited to demonstrate this fact must remain anonymous for reasons of military secrecy, but one typical illustration can be given.

In connection with the pre-war Naval Program authorized in 1939, General Electric was called upon to build destroyer propulsion equipments, each consisting of two 30,000 hp turbines for gear drive. A number of these equipments were built and actually placed in operation, but the quantities being manufactured at any one time were relatively

small, say in the order of two or three. On the basis of actual production costs these equipments sold at that time for as high as $576,000 per vessel.

With the start of the Defense Program we were requested by the Navy Department to organize for the manufacture of these equipments at the then astounding rate of four turbines per month. As the Defense Program progressed and finally became the War Program, our production was increased again and again until our present output is 12 of these turbines per month, or an annual rate of approximately 4,300,000 hp in this *one design* alone. As volume increased, the cost to the Navy progressively decreased from $576,000 per vessel to $500,000, and finally within the last few weeks we have undertaken an additional quantity at $392,000 per vessel.

This reduction of almost one-third in the cost of apparatus of a type comparable to the turbine generators which represent one of the utilities' major capital items, might seem exaggerated if it were not backed by similar experience with many other technical war produts or which there has been repetitive manufacture in large quantities. However, I do *not* offer this destroyer propulsion equipment as an example of what can be expected in price reductions on apparatus used by power companies, *unless* they can develop in their field opportunities for large volume repetitive manufacture.

The factors which will produce lower costs on heavy electrical apparatus when manufactured repetitively, are basically those which have brought about such revolutionary results in the mass production of consumer goods. With increased production of duplicate items, the high unit cost of designing "tailor-made" apparatus is reduced, and in addition, increased expenditures of engineering time and effort is justified in perfecting our designs for improved quality and lower manufacturing cost.

However, it is in our factory operations that the full weight of repetitive manufacture is felt. Factory load can be stabilized and shipping time materially shortened by manufacturing and stocking parts in advance. Through specialized training in machine and factory operations, less experienced labor can be employed. Even with the relatively small number of duplicate items which can be expected, jigs, fixtures, and other special tool equipment can be used to give lower costs and improved quality of product. The flow of materials, parts, and subassemblies can be more effectively planned and scheduled. Also, assembly operations can be simplified with a reduction in the time required. While these, of course, do not add up to the cost savings to be expected with mass production of the "endless belt" variety, actual experience such as that on the destroyer turbines previously mentioned, would seem to indicate that the stakes in the heavy apparatus field are still large and worth striving for.

On the other hand, the potential cost savings through standardization of heavy apparatus will *not* materialize unless there is a high degree of acceptance for the types and ratings selected. With relatively small quantities involved, the full effect on cost can easily be neutralized by continued requests for "tailor-made" designs, and special arrangements and accessories. As in the case of the war-time ocean convoy whose overall pace is set by the slowest unit, the speed of production of an entire manufacturing operation may be retarded and cost increased by the additional time required to handle special designs. Experience indicates that if the relative volume of these "specials" become appreciable, say 20 to 25 per cent of the total production, the effect of repetitive manufacture on cost is greatly reduced.

In spite of the problems which confront both manufacturers and users in establishing this program, I feel that immediate possibilities are present in power circuit breakers, metal-clad switchgear equipment, power transformers in small and medium sizes, unit substation, mechanical drive turbines, power cable, and other lines of equipment in which power companies are interested. Even the great individualist, the large steam turbine generator, although more difficult, is not beyond consideration, and I am glad to learn that a committee on steam turbine standardization has already been appointed by ASME.

Somewhat aside from the "cold dollar" possibilities which it holds out, there is another factor which may also bring about increased interest in the simplification of heavy apparatus requirements. On many types of electrical equipment used by power companies, it is unlikely that major improvements in operating efficiency will be as great or as frequent as they have been in the past. While progress in the electrical field, viewed from a long-range standpoint, has probably been speeded by the war, radical improvements in commercial apparatus may have to await the change-over from war to peace production, or the results of new developments in the metallurgy of light metals and high temperature alloys, in the chemistry of plastics and insulations, and in the field of electronics. As a result, it would seem desirable to concentrate our engineering, manufacturing and research effort on these broad new fields and on a relatively few designs suiting most conditions, rather than to dissipate that effort over the wide variety of "specials" required to meet individual practices.

However, we must face the fact that further major gains in the operating efficiency of apparatus such as turbines, transformers and switchgear cannot be counted upon to continue as rapidly as in the past. This, together with the changing aspects of the electric light and power business, which I have previously mentioned, will undoubtedly place increased emphasis on simplified and lower-cost plant and equipment. Thus, the possibility of carrying over into postwar commercial production, the knowledge and experience which we have gained in the war-time manufacture of heavy apparatus, would seem to warrant serious attention by users and suppliers, alike.

Now, as some of you know, we have recently suggested this possibility to a number of power company executives, whose reactions to the idea have been generally sympathetic and cooperative. The need for decreased postwar capital expenditure was repeatedly confirmed, as was our feeling that any program warranted consideration if it held out hope for lower equipment cost. On the other hand, there was a frank realization of the difficulties which must be overcome in order to establish a broad degree of standardization. These include the working out of generally acceptable designs and ratings; the adapting of these designs to existing installations; and in connection with certain types of apparatus, such as turbines, the necessity of achieving a like degree of standardization on associated apparatus, including boilers and condensers. But, in spite of all the difficulties which can be foreseen, the reception given the proposal encourages us to continue with this approach.

Unfortunately, however, the impression seems to have been gained in a number of instances, that an effective program could be initiated and carried out by the manufacturer alone. Obviously, this is impossible.

This idea cannot be made a reality by

(*Continued on page* 215)

Industry's Need of Engineering Uniformity

By C. A. Powel

Manager, Headquarters Engineering Departments,
Westinghouse Electric and Manufacturing Co.

An address before the 11th Annual Meeting of the Edison Electric Institute, New York City, June 3, 1943

THE war has brought us a very much accelerated technical development; new and novel controls in the electronic field; vastly increased production in the newer metals—aluminum, magnesium, molybdenum, new ideas in the plywood and plastic industries. What ultimate effect these will have on the central station industry none of us knows, but also anything that affects our daily lives has some influence on your industry. The war has also brought a pause, so to speak, in the sale of equipment to the central station industry. This is, therefore, an opportune time to review our engineering practices and equipment.

You have been accused by demagogues of various and multitudinous crimes, but it is significant that you have never been accused of doing a poor engineering job. Recent history has borne out the soundness of your policy of maintaining your engineering at the highest possible standard. The manner in which utilities have met the power requirements of the war effort would not have been possible except for the splendid engineering that has gone into your systems.

Perhaps we manufacturers can also take a little pride in this achievement because we have been allowed to participate in the deliberations of your technical committees, and after all, it is principally to the work of those committees that these results can be attributed. No individual company can take credit for the world-wide recognition of the high standing of our electrical utilities. Where a company has made a notable advance, this advance has been made known to other utilities through committee cooperation unparalleled in any other industry. If, therefore, I were to select a text for this talk, it would be a plea for continued and even more extensive cooperation through technical committee activity to solve the many problems that still face us and are likely to face us even more acutely in the future.

One of the most important of these problems is to find ways and means of reducing capital investment per kilowatt of load. Several methods have been suggested and some have been put into operation in recent months, such as reducing reserves, heavier loading of equipment, more extensive use of reclosing breakers, strengthening weak links, and so on. These all fall under the category of system engineering. A further possibility for attacking the problem of reduction of investment that has not been tried is the application of series capacitors to increase the useful load on transmission lines. Their use has been suggested for this purpose off and on for 15 years. Recent improvements in control methods and in the capacitors themselves suggest that the time has come when this idea should be put to practical use. The difficulty in the past has been that means for shunting the capacitors out of circuit at times of line faults has resulted in a decrease of the stability limit of the line. Now a scheme has been worked out that not only protects the capacitor insulation against excessive voltage but quickly restores it to the circuit after the faulted conductors are isolated, thus preventing a decrease in system power limit at the time of need. Under favorable circumstances a 50 per cent increase in the permissible loading of a transmission line is entirely possible.

Solving such system engineering problems must, of necessity, be a joint effort of the utilities and manufacturers. Likewise the standardization of equipment. When one speaks of standardization, a clear definition of what is meant by the term becomes necessary. It may embrace ratings, dimensions, form, and other pertinent characteristics. It is not to be confused with the manufacture of a number of units of duplicate design. Such units are only standardized if they are built to specifications and not merely by virtue of their duplication. Standardization without volume does not necessarily result in low cost manufacture. Examples where standardization has materially helped both users and manufacturers are to be found in watthour meter mountings, in direct pole mountings for distribution transformers, in the test specifications for electric ranges, and so on. These are built in volume.

Standardization must not be permitted to stifle progress. It must allow sufficient latitude and elasticity for individual expression in the more important characteristics of the device being standardized. The common building brick can vary widely in texture, quality, and color at the whim of its maker, but standardization of the dimensions of the brick was easy because of their relative unimportance in the ultimate application. All our science, the work of our research engineers and designers, our search for new materials, militate against the freezing of designs and rigid standardization. In the case of automobiles and electric appliances, which are manufactured by mass production, this danger is avoided by bringing out a new model every year or two that includes all the improvements devised as a result of experience with the current model. Consequently, in these fields, while all the advantages of repetitive manufacture are obtained, steady progress is made toward a better and cheaper product.

Duplication of a design already made will help the purchaser through reduction in cost of maintenance and reduction in the number of parts that have to be kept in stock. It will help the manufacturer by eliminating "specials" which are always costly. It will help both purchaser and manufacturer by reducing the elapsed time between placing the order and getting the unit into service, because there will be less time consumed in settling application details and in getting the engineering information into the shop. This kind of standardization will result from uniformity of engineering practice and from cooperation between the users and manufacturers.

Considerable thought has been devoted in recent years to the possibility of standardization in steam power plants. Steam turbine generator units today are designed to meet the ideas and requiremens of the ultimate user or station designers. Steam pressures and temperatures have increased steadily, and intricate steam cycles have been adopted to

improve plant efficiency through regenerative feed water heating. Overall standardization was, therefore, impossible but the manufacturers did make considerable progress in the standardization of component parts which were assembled in almost any conceivable combination.

Fortunately there appears to be developing on the part of the plant designers a definite trend toward the adoption of not over two or three combinations of turbine steam pressures and temperatures based on overall plant costs. It is also becoming rather generally recognized that the overall effect on cost per net kilowatthour of rather broad departures from the mathematical optimum thermal cycle, based on fuel costs and load factor is comparatively small. This trend should be thoroughly explored and encouraged by the utilities and manufacturers and it may be found that standardization in this field is both possible and practical.

This standardization should cover not only the steam conditions and kilowatt ratings but also should include the voltage, power factor, and short circuit ratio of the generators, if possible. Post-war developments are likely to produce high temperature insulation and better control of hydrogen pressure, both of which would have their effect on generator design. It is imperative that the manufacturers have the guidance of the users in determining to what extent these and similar developments should be exploited.

Standardization of the smaller turbine units should be even more readily obtainable than with the large units. Yet in the past manufacturers, in an attempt to get a larger share of the going business, were continually broadening their lines so that today over a hundred different turbines are available between 500 kw and 7500 kw capacity. This is perhaps one of the best examples demonstrating that standardization must be a joint effort of the purchasers and manufacturers. It will never be achieved by one party alone, but by joint effort this unnecessarily large number of available sizes can be reduced many times. It should be possible to agree on a small number of standard units or even "package power plants." Incorporated into the design of such a standardized "package power plant" would be such accessories as feed water heaters, condensate pumps, and boiler feed pumps. Knowing intimately the design of the major parts, these accessories could be selected intelligently to form one integrated power-generating unit rather than an assembly of disassociated individual parts.

These standardized power plants would be highly developed and would be completely factory fabricated. Where sizes permitted, they would be shipped completely assembled and placed directly on the purchaser's foundations.

By waiving the privilege of selecting from a large variety of turbine generator units, users would find many benefits accruing to them. Where large numbers of one size could be sold, the cost of the standardized apparatus might become so attractive as to make it difficult to justify the cost of special apparatus. Better operating results would be obtained as continuous duplication of equipment would eliminate design errors, and cumulative design margins would be largely eliminated.

Standardization of transformers has reached a high degree of perfection in the distribution lines, thanks to the work of the Joint EEI-NEMA Committee on Standards for Distribution Transformers. In the case of power transformers the same degree of standardization is not obtainable and perhaps not essential. Standardization of ratings, voltages, and insulation levels is probably sufficient to meet the requirements of the industry. Transformers lend themselves nicely to the standard-parts plan of design. In this plan, standard tanks, standard punchings, and standard accessories are put together in various combinations to achieve the desired result, which is a considerable simplification of manufacture.

In the matter of metal-clad switchgear which can be purchased in 15 to 20 combinations of standard basic units, it has been estimated that there is a saving of 25 per cent in the time required to place an order, as the selection of equipment is made from simple charts instead of having to be worked up in detail. For the same reason a similar saving is made in manufacturing time. It is not too much to say that except for this standardization work it would have been impossible for the manufacturers to have met their obligations during the recent period of heavy purchases when some of them were working at 300 per cent factory capacity as based on normal prewar performance.

Most of the credit goes to the AEIC-EEI-NEMA Joint Committee which has done a splendid job of switchgear simplification.

In the field of metering, the Meter and Service Committee of your Institute has done excellent work in promoting simplification and standardization of watthour and demand meters, which has proved of great benefit to the industry. It would be difficult to evaluate the tremendous economies that have been brought about by its work. Great as the accomplishments have been, we can expect even greater progress in the future. The Meter Committee is conscious of the high cost of metering and is convinced that much can be done to reduce costs without in any way sacrificing the present high standard.

With the advent of peace, the American home will be a market for power and merchandise of tremendous volume. The national average residence consumption of electric energy increased from 560 to 950 kwhr between 1930 and 1940, and from 950 to 1020 kwhr between 1940 and 1942. With such figures before us, it is a reasonable assumption that 200 kwhr consumption per residence will be reached early in the post-war period. This will require of the utilities a critical review of existing and projected distribution systems, and probably an extension of secondary networks into new fields. A few years ago the network principle of distribution was considered suitable only for the heavy load areas of relatively large cities. During the past year or so networks have been applied to factories in which of course, the load concentration is also quite high. In these factories the war effort has demanded that the greatest possible saving be made in critical materials consistent with reliable service. This has not necessarily always meant the lowest cost system. For example, it has been possible in some cases to save a large amount of relatively cheap conductor copper by substituting a smaller amount of more expensive transformer copper. Many of the ideas developed as a result of these war-enforced studies will lead to a more complete survey of distribution to domestic and commercial loads.

For load densities that do not justify networks, banked secondaries may provide a desirable solution. In this system, two or more transformers are connected in parallel on both the primary and secondary sides so that the load is shared by the transformers. Transformers are under development with built-in circuit breakers that simplify their protection when connected in this manner.

With ever-increasing loads, the time may be here when we should give serious consideration to three-phase distribution to homes. If the load reaches a point that calls for a larger conductor than the minimum permitted by codes, there may be a saving in going to a three-phase supply instead of the conventional three-wire single-phase supply.

In the commercial field we anticipate much modernization and replacement of lighting and there is every indication that fluorescent equipment, not radically different from that of the present, will be used except that the luminaires will be non-metallic. Since separate ballasts or controls of some sort are needed in any case, it would be logical to expect commercial lighting distribution voltages to follow the industrial trends, namely, 266/460 volts. In both the commercial and residential fields there will undoubtedly be a tendency toward curved or circular fluorescent lamps. These should be standardized right from the start as to dimensions for replacement and other reasons.

Much of the industrial lighting work carried out recently has been for war purposes and maintenance cost has consequently been a secondary consideration. In the post-war era this will not be the case and large units of say three kilowatts in the industrial field and 100 watts or larger in the commercial field will probably find more extensive use to reduce the number of lamps and fixtures and their maintenance. Here again there is a job of standardization to be done which should be a joint effort of the users and manufacturers.

Street lighting offers many opportunities for standardization. Utilities must now carry large stocks of glassware to take care of replacements on the variety of equipment in service. Standardization of principal glassware dimensions would greatly simplify this problem in years to come.

Uniform practices should be established for rating of street lighting equipment. At the present time equipment of identical electrical characteristics is being rated at 2500 volts by some manufacturers and 5000 volts by others, and for maximum lamp sizes varying from 500 watts to 1500 watts. Such variations in ratings has led to improper application and consequent field trouble which could have been avoided.

The joint work of the utilities and manufacturers over the years has brought a continuous advance in technical perfection of power supply with corresponding benefits to the community and to the nation. Looking ahead one sees an upward curve of steady progress. No loss of confidence in the future and no politically inspired attacks must be permitted to interfere with that progress. There is still much to be done. The exigencies of war have made it difficult for the utility and manufacturing engineers to get together as frequently as they should to discuss their many problems. It is hoped that this does not represent a trend and that when times become more normal they will resume their joint work more actively for the building of an even better system of electrical utilities, the foundation of our way of life.

Planning to Be Done

(*Continued from page* 199)

Major General Philip B. Fleming, Federal Works Administrator, in a recent talk stated that an outstanding need of the time is an overall national construction program consisting of thousands of projects, on which the advance engineering work will have been done before the end of the war. He declared that the time for post-war planning has passed—the time for designing is here. We may question General Fleming's program and particularly his emphasis on Federal control of a public works plan, but his suggestion that the time for designing is here is worth considering.

Let me repeat that your committee will endeavor to keep in touch with broad developments in post-war planning and to inform you from time to time concerning them. It will strive to serve as a clearing house for information in the hope that you will provide most of the sources. As a national committee there is little more that it can do.

The real work of planning must be done locally. The actual projects, the jobs themselves, the payrolls, are all local matters. The contributions that the electric utility company can make toward useful post-war employment in its service area will be the result of its own planning and of its active participation in local planning bodies.

The first part of this job will be done well because we are old hands at it. The second part will be somewhat new to many of us. True, we have played important roles in local civic enterprises, but there is doubt that many of us have taken hold of a community or regional job that will place as heavy demands on our time and thought as this one will. Therefore let each of us take his place now beside his local business neighbors to contribute our share to the leadership of our communities in planning to meet the business problems that lie ahead.

Your Stake in Standardization

(*Continued from page* 212)

any one manufacturer, nor in all probability, by the manufacturing industry as a whole. It can be attained only through the joint efforts of both manufacturers and users. It must be supported by a definite desire to see something worked out along these lines within the overall industry. It must be confirmed by a willingness on the part of the manufacturers and the power companies to accept compromises in the individual practices followed in the past. It must grow into a program in which the *leaders* of both branches of the electrical industry believe, and to which they will adhere.

I know you will pardon me if I conclude with this injunction: *TIME IS SHORT!* If this idea is sound, we should begin *now* to take steps toward putting it into practice, so that the difficulties will have been overcome when the power companies once again require heavy apparatus in volume. In this connection, I am reminded of a story which I recently heard:

It was a raw, cold morning in March, and a little snail was slowly and painfully climbing up the trunk of a cherry tree. A beetle stuck his head out of a warm cranny in the bark and spoke to him. "Hey, Snail, where are you going? There aren't any cherries up there." But the snail kept going right along. *"There will be* when I get there," he said.

Columbia System to Have Accident-Free Drive

Columbia Gas & Electric System, which has been, for many years, a strong advocate of employee safety in its operations, is this year undertaking a System-wide drive to attain an accident-free August.

Experience in similar campaigns in the past which have been carried on by individual System companies, indicates that an intensive campaign in one month, in which the interest of every employee is aroused, has a carryover effect for a number of months afterward. It is hoped that the campaign slogan, "On the Job" will also have its effect in the reduction of time lost for other causes.

John E. Zimmermann

JOHN EDWARD ZIMMERMANN, member of the Board of Trustees of the Edison Electric Institute and chairman of the Board of Directors of the United Gas Improvement Company, died May 31 at his home in Philadelphia after a long illness. He was 69 years of age.

An outstanding leader in the public utility field and in civic, cultural and benevolent activities, Mr. Zimmermann was born in Buenos Aires, the son of John C. and Anna Cecelia Mackinley Zimmermann.

He was educated at the National College and the University of Buenos Aires and at the University of Pennsylvania. The Spanish-American War interrupted his studies at Pennsylvania when he enlisted in the First City Troop of Philadelphia. He served as a private and an interpreter in the Puerto Rican campaign.

After the war, Mr. Zimmermann was graduated from Pennsylvania in 1900 as a mechanical engineer. His initial job was in the shops of the George V. Cresson Company, a post he soon left to become secretary and superintendent of the American Pulley Company.

Mr. Zimmermann joined the engineering consulting firm of Dodge & Day in 1907, thereby stepping over the threshold to international prominence. Largely through his efforts the firm, later reorganized as Day & Zimmermann, Inc., became a leader in the field of public utility management and handled extensive government work in the first World War.

He left the presidency of Day & Zimmermann in 1929 to take up a similar position with the United Gas Improvement Company. He was elected chairman of the company in 1940.

Mr. Zimmermann had wide humanitarian interests. He was trustee of the University of Pennsylvania, chairman of the medical board there, and a director of the Philadelphia Orchestra Association. He was a director and a member of the executive committee of the Philadelphia Y. M. C. A. He also was a member of the advisory committee for the War Fund of the Southeastern Pennsylvania Chapter, American Red Cross; a director of the Playground and Recreation Association and a vestryman of St. Thomas' Episcopal Church, Whitemarsh.

He was a director and former chairman of the board of the Philadelphia Electric Company and a director of the Public Service Corporation of New Jersey. In addition, he was a director of the Philadelphia Gas Works Company, the Welsbach Company, United Engineers and Constructors, Inc.; the Pennsylvania Railroad, the American Pulley Company and Chestnut Hill Hospital.

He was a member of the American Society of Mechanical Engineers, the Franklin Institute, and the University, the Philadelphia, the Midday, the Racquet, the Engineers, the Rittenhouse, the Corinthian Yacht, the Sunnybrook Golf, the Seaview Golf and the New York Yacht Clubs.

At a meeting of the Board of Trustees of The Edison Electric Institute, held at New York City on June 2, 1943, the following resolution was adopted by a rising vote:

RESOLVED, that the Trustees of Edison Electric Institute have learned, with deep sorrow and a sense of personal loss, of the death, on May 31, 1943, of their fellow-trustee, John Edward Zimmermann. An outstanding figure for a generation in engineering and public utility operation, a wise counsellor and firm friend, a Trustee of the Institute since its organization and always faithful to his trust, kindly and courteous but unyielding where a principle was involved, his presence and advice will be sorely missed by his surviving colleagues. Be it

FURTHER RESOLVED, that this resolution be spread upon the minutes of the Institute and that a copy be sent to his widow with the sincere sympathy of his associates.

Winners in PUAA Advertising Contest

Entries in a contest conducted by the Public Utilities Advertising Association to determine the best advertising developed by utility operating companies in 1942 established a new high record, according to a statement by National Contest Committee Chairman, E. N. Pope, of Raleigh, N. C.

The contest, an annual event, was open to all operating utility companies in the United States and Canada regardless of membership in the Association. "Not only was the number of companies entered in the contest this year substantially greater than usual," said Mr. Pope, "but the quality of advertising showed marked improvement."

Certificates of award to both National and Regional winners were presented at a conference of the PUAA held at the Edgewater Beach Hotel, Chicago, on June 24 and 25.

Upon being asked to what he attributed such unusual interest in the contest this year, Mr. Pope answered, "It was the result primarily of improved advertising. Those responsible for producing the advertising were anxious to see how the product of their efforts compared with advertising developed in other parts of the country. In addition, the contest rules were changed to encourage more liberal participation on the part of small companies. Companies of comparable size competed in eight Regional contests from which winners were selected for competition in the National Contest."

Advertising was entered in 18 classifications embracing all media. Winners of National Awards in the various classifications were as follows:

CLASSIFICATION	NATIONAL WINNER
Public Relations Newspaper Advertising	Philadelphia Electric Company
Newspaper Advertising Supporting War Effort	Public Service Co. of Oklahoma
Nutrition Promotion	New Orleans Public Serv., Inc.
Customer Service Newspaper Advertising	Portland Gas & Coke Co.
Campaigns	Duquesne Light Company
Newspaper Advertising (for Transportation Companies)	New Orleans Public Serv., Inc.
Employee Magazine	Niagara-Hudson Power Corp.
Employee Newspapers	Cincinnati Gas & Electric Co.
Bill Enclosures for Residential Customers	Potomac Edison Company
Direct Mail Advertising—Residential	Georgia Power Company
Direct Mail Advertising—Industrial and Commercial	Georgia Power Company
Special Booklets, Pamphlets, Etc.	Duquesne Light Company
Window or Inside Display	New Orleans Public Serv., Inc.
Outdoor Advertising of All Types—Painted Bulletins, Posters, Vehicle Posters, Etc.	B. C. Electric Railway Co., Ltd.
Radio Advertising	Duquesne Light Company
Annual Reports to Stockholders	Duquesne Light Company
Annual Reports to Employees	Portland General Electric Co.
Motion Pictures	Pacific Gas & Electric Company

Reducing Accidents

By W. F. Nimmo

Paper delivered before the Accident Prevention Committee, EEI, Chicago, Ill., May 12, 1943

YOUR Chairman, Mr. Diehl, requested of Mr. Sayles, Chairman of the Transmission and Distribution Committee, that he assign someone from that Committee to present briefly to you how the Accident Prevention Committee could be of assistance to the Transmission and Distribution Committee in overcoming some of their accident prevention problems. I believe it was at the instigation of your secretary that I was selected for this job, although I am far from being an expert on the subject under discussion.

While thinking over the things I might say I saw an article in a recent issue of the *National Safety News* by Mr. C. L. Hightower entitled "Good Safety Records Aren't Accidents" and I realized that in war or in peace, regardless of changing conditions, there are no real basic changes in Safety Work and Accident Prevention. Basically we go back to two fundamentals, supervision and training. Under varying conditions those organizations with good safety records are the ones in which the management and supervisory personnel take a real interest in accident prevention. Lip service will not do. No matter how busy we may be it is necessary to make available the necessary time to train every employee in the best safety practices so far as his particular job is concerned. Furthermore, it is necessary to do this over and over until performing his work in a safe manner becomes second nature with each employee.

In order that what I have to say would not reflect to too great an extent on my personal views, I wrote to several members of the Transmission and Distribution Committee requesting their views as to what I might say that would represent a cross section of the ideas of the Committee. Some to whom I wrote had no definite ideas on the subject. This may mean that there is still much missionary work to be done by your committee. No matter how well your Committee may do its work in putting the spotlight on the causes of accidents and suggesting methods for their elimination, unless you can find some means of bringing these things directly to the utility employees concerned (which can only be done effectively through the supervisory personnel) accidents which could and should be eliminated will continue to occur.

However, there were a number of responses from members of the Committee which contained definite comments on the subject under discussion. The items mentioned as deserving special consideration are as follows:

(1) Due to increased activities and shortages of manpower past safety standards and operating practices are to some extent being affected. Modifications in these practices may be necessary for the duration.

(2) Lowering of the physical requirements of men we accept for employment may be necessary.

(3) It may be necessary to discard the past practice of identifying underground circuits in every manhole, due to shortage of manpower and materials.

(4) Because of high standards of workmanship and low loading factors it is seldom that an employee has been injured in the past by a cable blowing up. It is conceivable that that hazard may be greatly increased as heavy overloads are carried as a regular practice rather than as an emergency measure.

(5) Shortage of manpower will probably result in a decrease in the time allowed to train helpers to become first class mechanics.

(6) Substitution of women for men on manual jobs.

(7) In those organizations which are not in defense areas work for the duration will consist mainly of maintenance work which is more hazardous than new construction.

(8) Increased salvage work offers many more opportunities for slipping, falling or strains due to handling heavy materials.

(9) Shortage of the type of protective equipment used in the past. The need for substitutes for such equipment.

A review of these comments should be helpful. One viewpoint is that we might expect accidents to be reduced due to the fact that the utilities will lose their younger men and are not able to take on replacements. It is thought that due to the fact that in these cases work will be carried on by older and experi-

Mr. Nimmo, a member of the Transmission and Distribution Committee, was requested to present a paper before the Accident Prevention Committee, telling briefly how the Accident Prevention Committee could be of assistance to the Transmission and Distribution Committee in attacking some of the accident problems with which the transmission line employees are faced. His timely comments are applicable to all departments.

The author in discussing some of the cardinal points in reducing accidents emphasizes that when management takes a real interest in accident prevention work and passes the word along to the supervisory force that accidents *must* be reduced, supervision will follow through with the necessary training programs that incorporate safe practices, and as a result, accidents *are* reduced. Because of curtailments arising out of war conditions there will be great pressure to modify certain safety standards and operating practices. This must receive the most careful consideration because if such practices were deemed necessary for more experienced and capable personnel, they will be even more vital for less trained men. Fundamentals of safe job procedures should not be discarded if we are to avoid the lost man-hours due to accidents which will further aggravate a critical shortage.

When it becomes necessary to take on men with physical limitations, these men should be assigned to jobs within their capacity so as not to hazard the life of other employees or equipment.

It is all the more important to have equipment — cables, circuit breakers, disconnects, pipes, valves and machinery properly identified and tagged, due to taking on new employees or transferring employees from one department to another. One error may mean the loss of practically irreplaceable employees or equipment.

enced workmen who have had long years of training both in their job and in safety work, the result should be a decrease in the accident rate. I do not believe that this is the case, as in those companies where replacements are not being made and where there is no new construction, the work that is being done involves working near live lines and on equipment which may not be in first class condition, which would appear to offset the experience of the men doing the work. Furthermore, in many companies, inexperienced men are being taken on, and as the industry, to some extent, has dropped the physical restrictions placed on new employees, we are not getting the same class of employee physically that we were two or three years ago. This means that more effort will be necessary in training these men both in their work and in safety methods.

Another comment was with reference to the vast amount of salvage work which is now being carried on by the utilities. Where we used to hire younger or middle aged men in good physical condition, mentally awake and generally interested in what was going on around them, we find ourselves now in the position of accepting men, and glad to get them, whose physical condition and mental alertness are considerably inferior to the quality we had considered our minimum standard two years ago. There will always be in our industry considerable heavy, or what is commonly known as "bull," work to be done, and with the type of men we are now taking on, we can expect an increase in the number of hernias, sprained backs, broken arms, etc.

Another factor which may increase accidents is the necessity for shifting men in an organization to jobs with which they are not familiar, in order to solve manpower problems. In general, in the past it has been the practice to give men some general safety training, but to have the safety training for each employee specialized so as to cover the particular work in which he is engaged. It may be that we will have to broaden our training programs and train our employees with the idea that certain men will be shifted to other jobs.

In the past, it has been the general practice to have a man work as a helper or an apprentice for three or four years before allowing him to be classified as a journeyman mechanic. This meant that while a man was working as a helper, over a comparatively long period of time he had a chance to observe the procedure followed by the first class mechanics day after day, and when it came time for the helper to go out with a set of his own tools, he would be imbued with correct ideas and practices so that it was almost second nature for him to do his work in an efficient and safe manner. It appears that we are rapidly coming to the point, due to the manpower shortage, when we will take men from most any walk in life and attempt to train them to become expert mechanics in a matter of a few months, and we should realize that such men cannot start out with the long-time experience that will see them through all situations with which they may be confronted. The answer to this as I see it is more intensive safety training. We are too apt in the stress of these times to feel that we do not have time for safety training of our personnel. However, if we stop to think the problem through, I am sure we will find that this is no time to reduce our efforts in this direction. On the contrary, our efforts should be redoubled and the matter of safety training should not be left as it sometimes has in the past as the sole responsibility of our safety supervisors, but should be made the responsibility of every supervisor in an organization from the bottom on through to the top.

A comment by one of our members was that it would be quite useful for the Accident Prevention Committee to collect case histories of as many as possible of the accidents which occur on overhead lines and underground lines, analyze these as to cause, and present the results for the attention of the Transmission and Distribution Committee with the request that recommendations be made as to how to eliminate the causes of such accidents.

Your attention is called to a report which appeared in the EEI BULLETIN for May, 1943, prefaced by Mr. D. C. Stewart on the subject "Experience Points The Way in Accident Prevention." The Report speaks for itself and should be made available for study to all the supervisory personnel of our member companies.

I have no panacea to offer you as to how your Committee may help us or how our Committee may help you. Good safety records in the past have been due to long hours and to what seemed at times to be monotonous repetition of safety instructions on the part of those responsible for the safety work in our organizations. It may be that we have been too prone to pass the responsibility for this phase of work on to our safety supervisors and let it go at that. I believe that now is the time to start afresh and let everyone who holds a supervisory position take it upon himself as his responsibility to see that the men in his organization are properly trained in safe practices and that these practices are enforced.

As I said in the beginning, in spite of all the changes which are taking place in our world today, in matters of safety there have been no basic changes. Fundamentally, good safety records and accident prevention are dependent upon proper supervision and efficient training. No matter whether the new employees are older men or are young women the basic fundamentals still remain the same. I believe that one important way in which your Committee can be of assistance in accident prevention is to, in some way, bring forcibly to the managements of our member organizations the necessity for increasing their vigilance in regard to safety. I am afraid that too often in the past the valuable reports which your committee has prepared have reached member organizations and did not get into the hands of the individuals where they would do the most good. Too often these bulletins and reports stop too near the top personnel of an organization and do not get down to the lower supervisory personnel. If there is any way in which you can make it possible for your reports and bulletins to reach the men directly connected with the supervision of the work in the field, I believe you will have gone a long way toward eliminating the present increase in accidents.

WASHINGTON WIRE

"CRIMP BY CHRISTMAS will be pretty deep in general living standards in the United States.

"Only three major civilian shortages are 'official' yet in Washington: (1) Household fuels, (2) private auto transportation, (3) medical care. But other commodities and services will grow scarce or disappear in some localities. Maldistribution will magnify all shortages.

"Planners rush to lock empty stable doors. . . .

"Three home front programs stand out as best-managed: War housing, rail transport, *public utilities*."—*Wall Street Journal*, June 18.

Electrical Affairs in Canada

By W. C. Mainwaring
President, Canadian Electrical Association

Address before the CEA Annual Meeting, Seigniory Club, P. Q., June 17, 1943

As we gather for this Fifty-third Annual Convention our thoughts are naturally filled with the tragedy of the world war now in progress and this naturally dominates all of our thoughts and actions. Since our last meeting a year ago the tide of war has changed very considerably in favor of the Allied Nations, and although there was very little doubt in our minds any time as to the final outcome, we are now certain that victory will eventually be ours. Canada has been a peaceful nation and therefore has never been equipped in so far as manpower or industry is concerned to make war. This might have been a severe handicap had it not been for the enterprise of the Canadian nation, and when the history of this war is written it will be found that from the standpoint of moral and physical support, from the standpoint of ingenuity and enterprise in the production of the weapons of war, and in assuming a financial burden far beyond anything the Canadian people were considered capable of, the position which we have reached and our stand among the Allied Nations is something of which every Canadian may be justly proud.

Again this year your Executive questioned the advisability of holding a Conference due to war conditions, and a poll of our members indicated a wide-spread feeling that there was a greater need this year than ever before to meet and discuss the problems facing our industry, not only at the present time but in the years immediately following the war. It was therefore decided that the theme of this Conference would be Post-War Planning, and a real effort has been made to bring together the Executives of Utilities and Manufacturing Companies so that the very fullest possible discussion can be given to this most imporant subject.

To all in attendance at this meeting, and particularly those that have come, at some inconvenience, from great distances, I express my most sincere appreciation, and feel confident you will leave the Conference feeling that any sacrifice you have made has been justified.

In reviewing the part that this great Dominion has played in the war effort of the Allied Nations to date it is with considerable pride that we find the Electrical Industry establishing new production records from month to month. The tremendous production of war materials that will brighten the pages of Canada's history could not have been possible except for the energy we are so abundantly blessed with in the form of water power.

As at Jan. 1, 1943, Canada's hydraulic development totalled 9,225,838 hp. During the year 1942 new water power installations totalled 378,600 hp, and since the start of the war we have added approximately 1,600,000 hp. Construction now under way will increase this figure by an additional million horsepower during the next 18 months, and we will still have available for development approximately 80 per cent of our total water power resources. Nature certainly dealt generously with us in creating these water powers, and this will undoubtedly have a great effect on the future prosperity of the Dominion.

The membership of our Association in so far as Utilities are concerned is confined to what we commonly refer to as privately owned and operated companies. During recent years we have seen private enterprise becoming the target of political propagandists and opportunists, and as an industry we have done very little to combat the unfair comparisons that have been made as between private and public operation. The time has arrived when we must explain the significance of private versus public ownership and bring home to the taxpayer the realization that the only difference between private and public ownership is, that the so-called public utilities are free from taxation and that the taxpayers in some of the provinces in Canada are footing the bills to the advantage of other provinces. I am, therefore, going to devote some of my remarks to this particular matter because I feel the time has arrived when we must place factual information that cannot be refuted before the man on the street.

According to the Census of Industry report issued by the Department of Trade and Commerce, Dominion Bureau of Statistics, 1943, the gross revenue of so-called privately operated utilities in Canada for the year 1941 (the last year for which complete figures are available) amounted to $111,000,000 and these companies paid in taxes, $22,900,000 or slightly over 20 per cent of their gross revenue. During the same year the gross revenue of all publicly operated utilities was $74,000,000 and they paid just over $1,000,000 in taxes, or slightly under 1½ per cent of gross revenue.

Let us compare gross revenue and taxation of our British Columbia utilities, where practically all of the companies are privately operated, with Ontario and Manitoba where most of the operation is in the hands of publicly operated utilities. The gross revenue in 1941, to again quote from the Census of Industry report, of privately operated companies in British Columbia was $16,400,000 and they paid taxes amounting to $3,687,000, or slightly in excess of the Canadian average of 20 per cent of gross revenue. During the same year the publicly operated utilities in Ontario, with gross revenue of $63,900,000, paid taxes of only $718,000, and in Manitoba, with gross revenue of $4,500,000, paid taxes of only $89,000.

A glance at the Annual Report for the year 1942 for the Winnipeg Hydro should certainly convince the most skeptical that public operation is no panacea for the ills that so many try to contribute to the operation of private companies. The report referred to indicates that the gross revenue of Winnipeg Hydro during 1942 was $4,034,000, that taxes were paid amounting to only $89,000, or slightly over 2 per cent of gross revenue, and that they had a net profit of $477,600. If this utility had paid taxes on the same basis as private companies are being assessed, which on the average at the present time is 20 per cent of gross revenue in Canada, they would have contributed $800,000 in taxation and the net profit which they show would have been completely wiped out.

Comparisons are sometimes helpful, and without dwelling on this subject too much I intend to only refer to one Government development in the United

States of the many they have embarked on, and that is, the much publicized Tennessee Valley Authority, referred to as T. V. A. Figures recently issued by the Management of T. V. A. show that at the end of 1942 there was an investment in power plant of $283,000,000, and it is claimed that they showed an operating income *before interest* of $4,280,252. If interest were charged at only 3 per cent on plant investment of $283,000,000, this would amount to $8,490,000 per annum, or $4,210,000 in excess of operating income. This is public ownership in the United States, and shows the extent to which the public treasury, i.e., the taxpayer, is being called on to bonus power development by the Government.

How much longer are we who represent the privately operated companies going to sit idly and let operators and proponents of publicly owned utilities dress up their annual statements to indicate their operations are highly successful when many of them are being heavily subsidized, are paying practically no taxes, and certainly are not being operated any more efficiently than privately owned companies. We can prove that with the same exemptions from taxation as are extended to publicly operated utilities that we most certainly could quote equal, if not lower, rates, and this is something the average taxpayer does not understand.

To deal further with the situation in regard to the Ontario Hydro System, I am incorporating in my address an editorial from the *Toronto Saturday Night*, April 24, 1943, which outlines the situation that would exist if such publicly owned corporations had to face similar taxation to that imposed on companies privately operated.

HYDRO AND TAXES

"A very interesting controversy seems to be proceeding between the Secretary Treasurer of the Public Utilities Commission of Ontario and the *Fort Erie Times-Review* on the subject of the taxation of the Ontario Hydro system by the Dominion. The Secretary-Treasurer, it appears, committed himhelf to the proposition that if Hydro were taxed, 'then rates would have to be increased and a struggle of some thirty years for public ownership and low rates would be defeated.' In this, it seems to us, he committed a grievous error. The *Times-Review* points out that there would be no necessity for any increase in rates; all that would happen would be that 'the large sums now being placed in its reserve fund by Hydro each year would be reduced somewhat,' which would merely cause 'a slowing up of the amortization of the net bonded debt of Hydro and the Hydro municipalities.' The federal taxes, the *Times-Review* points out, would be rather less than half the amounts annually placed to reserve during the last three years.

"There is, we think, another objection to the Hydro argument. If it were true that the success of the struggle 'for public ownership and low rates' depends solely and entirely upon the fact that public ownership is exempt from certain national taxes which private ownership has to pay, then all we can say is that public ownership would have no vestige of claim left for the superiority of its methods. It gets its capital cheaper than private ownership, because the whole credit of the community is behind its promises. It enjoys freedom, as an emanation of the Crown, from many of the obligations of private ownership. If, in spite of these advantages, it still cannot give low rates unless it is bonused by exemption from the taxes paid by private ownership, there does not seem to be much left to be said for it.

"So long as corporate taxation continued to be as light as it was in the days when Hydro was first established, the question was unimportant. Now that corporate taxation, if applied to Hydro, would give the Dominion fifteen million dollars a year of much needed revenue, which it would obtain without question if Hydro were a corporation—and which it does obtain from the corporations which do the same business in other provinces—justice demands that Hydro should pay its share."

I am sure you will all agree there is great need for public enlightenment.

How much longer are the Federal revenue authorities going to permit the present unfair taxation discrimination between privately owned and publicly owned utilities to continue. We understand, and have every reason to believe the authorities when they say, there is the most pressing need for every dollar of taxation revenue. Surely the authorities are not unaware of the great reservoir of taxation which exists in Ontario and some other provinces resulting from so-called public ownership, and which, so far, is practically untouched.

During recent years there has been a new interest created across Canada for the more intensive electrification of rural areas. No one will deny the desirability of bringing the comfort, convenience and utility of electric service to every farm in Canada within reasonable distance of transmission lines provided this can be done on a basis of sound economy. If this service has to be subsidized both as to original installation cost and annual operating cost by the taxpayer at large let us tell them the facts. Last year the province of Manitoba appointed an Electrification Inquiry Commission, which has already produced a most excellent report entitled "A Farm Electrification Programme." British Columbia has appointed, under the direction of its Public Utilities Commission, a Rural Electrification Committee to study this important subject. Privately operated companies throughout Canada have sought no assistance nor have they been offered any in the general plan of Rural Electrification. According to the report of the Manitoba Commission above referred to the province of Ontario has made an advance of $23,500,000 to serve rural customers, on which the customer pays no interest charge. In the province of Manitoba it is proposed that revenue from water rentals provide the funds for subsidizing the proposed Rural Electrification scheme, and it is interesting to know that a substantial portion of these water rentals come from the privately operated companies.

At the end of 1941 British Columbia had electrified 35.8 per cent of its farms, Ontario 37 per cent, Nova Scotia 26 per cent, and Quebec 23.3 per cent. Without any subsidy of any kind the privately operated companies in British Columbia led the field in percentage of farms electrified for many years and have only recently lost this lead by a small percentage to Ontario. With assistance up to $9 per rural customer per year the province of Nova Scotia has only electrified 26 per cent of its farms, and with the tremendous expenditures referred to by the province of Ontario only 37 per cent of its farms enjoyed electric service at the end of 1941.

It is estimated that the annual bonus required to serve the rural consumer in the province of Manitoba under the proposed scheme of the Manitoba Electrification Inquiry Commission would be $21 per consumer per annum, and this will have to be provided through the medium of taxation by people living in cities, so why not come out and tell them frankly just what the situation is.

Privately operated companies not being able to secure tax-free money and not being favored with these large Government subsidies are naturally limited in the extent to which they may serve rural customers regardless of how anxious they might be to serve them. Privately owned utilities have done most of the pioneering so far as the electric service is concerned in their communities without Government aid or without expectation of reward other than the revenue received from the rendering of this service. There has been more than a mere gesture of willingness on the part of private enterprise to cooperate with the authorities and with the consumer, which raises the question as to why the privately operated companies should not present their case in the strongest possi-

(*Continued on page* 223)

Transmission and Distribution Committee Meeting

E. V. Sayles, *Chairman*

THE Spring Meeting of the Transmission and Distribution Committee was held at the Edgewater Beach Hotel in Chicago, on May 10 and 11, 1943.

The first session, with Mr. T. G. Hieronymus, chairman of the Underground Group, presiding, was devoted to problems of underground construction and operation. Mr. W. Perry Cook of the Duquesne Light Company presented a paper entitled "Impulse Voltage in 60 Cycle Life Tests on 22 Kv Cable Terminals." This paper discussed the relative merits of the various methods of terminating 22 kv cable on pole risers installed on the Duquesne Light Company system. In particular the paper dealt with the comparison of brass stress cones with varnish cambric stress cones. The tests were initiated because of the abnormally large number of failures on the terminals which contained brass cones and were filled with asphalt base compound. The conclusions drawn from the tests were as follows:

1. The tape cone type of construction is superior to the rigid cast brass cone type.

2. The life tests show that either type is satisfactory provided no surges are imposed on the line.

3. Where tape cones are used exclusively, the insulation level (both 60 cycle and impulse) of the cable terminal is raised above that of the cable.

4. The insulation level of the cable is well above the protection of the lightning arresters.

5. No particular hazard is introduced in the line due to the contamination of the joint filling compound by oil from the cable terminals.

Mr. Hieronymus abstracted a paper prepared by Mr. Nimmo of the Virginia Electric and Power Company on "Possible Increase in Accident Rate of Underground System Employees During War Times Due to the Minimum Training of Personnel." This paper stressed the importance of more intensive training of workmen in order to reduce the possible increase in accident rates. The discussion following the paper cited other reasons for increased accident rates such as the present-day attitude of independence and indifference of workmen and their disregard for safety rules. Some companies, it was stated, have but little trouble with skilled, well trained workers following safety practices, but they do have considerable trouble with unskilled workers. It was agreed in general that the present manpower shortage and resulting indifference to holding the job results in lack of interest by the workmen in the regular safety practices.

In the discussion of proof-testing underground cable, the value of proof-testing after failure and of new construction was cited. Some of those present commented that periodic proof-testing had been abandoned.

Mr. M. W. Ghen of the Duquesne Light Company, reporting on non-oil filled transformers of the subway type, gave the information that the manufacturers are actively working on this design of transformer, from both the standpoint of non-organic materials and from the standpoint of maximum operating temperatures. Some manufacturers have this type of transformer in production at the present time.

At the afternoon joint session of the Transmission and Distribution Committee and the Electrical Equipment Committee, the general subject of post-war planning was discussed by several speakers. Mr. F. E. Sanford, of the Cincinnati Gas and Electric Company, gave as an introduction to post-war planning a paper, "Looking Back to View the Future." Mr. Sanford reviewed the progress made in science after other wars and cited new developments being made during this war which should lead to new heights of development.

Mr. B. M. Jones of the Duquesne Light Company enumerated the factors favorable and unfavorable to utility operation. He cited a huge back-log of business to satisfy normal demands, the necessity to replace many war-time installations, deferred maintenance, reserve margins, and the trend to suburban and rural home development, all of which should provide an impetus to the utility business. On the other hand, he cited competition in the utility field which can be met only by engineers working closely with the sales, rate, financial, and extension departments.

Mr. Stanley Stokes, of the Union Electric Company of Missouri, discussed the subject from the standpoint of the work of the post-war planning committee of his company and said that after several months' effort, they had begun to realize their inability to arrive at any definite solution of the problem because of its many ramifications.

Mr. H. A. Dryar of the Philadelphia Electric Company thought that the line of attack was along the occurrences in the past and said the problem is not what we are going to do but what others will do. He stressed the importance of optimism.

Mr. H. E. Deardorff of the Dayton Power and Light Company spoke on the situation at Dayton, Ohio, and stressed the probability of increase in the use of television, infra-red, fluorescent, and quick-freeze refrigeration, and warned of the probable competition of Diesels.

Mr. H. P. Seelye of the Detroit Edison Company stressed the importance of improved service and improvement in appearance of overhead lines.

Mr. Philip Sporn, of the American Gas & Electric Service Company, said that post-war planning means actual preparation of plans, specifications, and ideas, and not just talk. To accomplish this, the engineers must have close contact with the management and will need to know what kind of world it will be—a "closed world" like after the last war, or an "open world." Also, what kind of economic system will exist—a collective type or a private enterprise type.

The Tuesday morning meeting was joint with the Electrical Equipment Committee. Mr. A. E. Silver, of Ebasco Services Inc., presented a prepared paper, "System Voltage Control in War Emergency." He said that in the present emergency where it is mandatory to push existing facilities for increased duty there is ample reason for fresh review of ideas and practices in the matter of system voltage control. The early concept of system voltage—that of working from the generating station outward to the extremity of the system—has largely been replaced by working from the customer's service voltage as a level of reference back to the generating station. Compensated control of generating station bus voltage can make present facil-

ities more capable of maintaining adequate service voltage.

He discussed several examples embracing interconnected systems where a thorough analysis of existing conditions and possibilities of better voltage control for the entire interconnected system had been worked out and he discussed the advantages of the coordinated operation of these systems. He mentioned that there are still many situations where, by expeditious attention and study, substantial gains can be made in the ability of present facilities to maintain adequate service voltage with negligible capital outlay and use of critical materials.

Mr. J. H. Foote, of The Commonwealth and Southern Corporation, spoke briefly on the proposed War Production Board simplification of copper wire and cables, and cited standardization that has been done on this item by various standardizing bodies such as ASTM, AEIC, ASA, and others. He reviewed briefly the scope of ASTM Specifications B-1, B-8, B-172, B-173, and B-174 which cover the field of stranded cables and which, if widely adopted, would result in considerable simplification.

Mr. Eugene A. Brock, Deputy Director of War Manpower Commission, Region VI, with Mr. R. C. Behn, Occupational Analyst, War Manpower Commission, warned that some rationing, up grading, and shifting of labor is normally expected this year. About one-half the people in this country will either be in the armed services or will be gainfully employed, and the practice of shifting of jobs at will, will be out for the duration. Men and women will have to be trained for more responsible jobs. Fields that are ordinarily considered for men only will be invaded by women and he cited as an example the steel industry. He also said that more women could be used in the utility field in positions such as in the operating departments. Some sort of share-the-work plan might be an answer to labor problems in the utility field.

Mr. H. O. Sprinkle, Monongahela-West Penn, presented a paper prepared by Mr. D. C. Stewart of the Buffalo Niagara and Eastern Power Company, on "Analysis of 1941 Fatal Accident Prevention Committee." This report covered 121 fatalities in the industry for 1941 and showed 74.4 per cent due to electrical shocks or burns, 9.1 per cent to falls and 6 per cent to automobile accidents. Mr. Sprinkle emphasized the need for improved job and supervisory training program for lowering accident rates. Improved accident rates have ordinarily followed improved job and supervision training programs.

A discussion of the preservative treatment of Western Red Cedar poles with Pentachlorophenol was presented by Mr. J. B. Wentling, Director of Research, Consolidated Treating Company. Mr. Wentling said that, although all phenols have high toxicity, Pentachlorophenol is the most suitable for the preservative treatment of woods because of its low solubility in water and its low evaporation. He said that Life Span poles are Western Red Cedar poles only and do not include any other species of wood. A light grade of fuel oil is used as a vehicle for the preservative and serves as no other purpose.

He stressed the importance of having the proper amount of preservative in the pole for the life of the pole and he said that ¼ lb. of dry preservative per cubic foot of sapwood is an adequate amount. This amount of preservative is obtained by a two-hour immersion in a cold 5 per cent solution of Pentachlorophenol and light fuel oil. In speaking of the average depth of sapwood, he said that a measured average of 6/10 inch was obtained from 12,000 poles.

An average penetration of ½ inch is obtained at the time of treatment which results in 100 per cent sapwood penetration in from 30 to 60 days. The usual method of testing for penetration is not adapted to this treatment and the penetration can only be determined in the laboratory as it is distinctly a laboratory process. In speaking of the life of Pentachlorophenol treated poles, he estimated on the basis of the life of butt treated poles that the life should be somewhere in the neighborhood of thirty years.

Mr. Sayles closed the meeting and announced that this was his last meeting as chairman of the committee and expressed his thanks to the group chairmen, the secretary, and others who had assisted during his two years as chairman.

New American Standards for Transformers, Regulators, and Reactors

THE completion of approved American Standards covering transformers, voltage regulators, and reactors—has been announced by the American Standards Association.

These standards, which have the advantage of criticisms and suggestions made for 18 months on a preliminary edition, supersede numerous other publications and constitute a veritable bible of information for manufacturers and users of transformers.

Completion of the new standards represents the culmination of ten years of cooperation and concentrated work on the part of the industry, with special benefit from and use of half a century's research carried on by AIEE, EEI and NEMA.

For the first time in any industry standards, comprehensive guides for loading under various service conditions are given. Thus the standard rating becomes of less significance as a guide to the output but retains its importance to the purchaser as a measure of the amount of material in the transformer. The guides for loading transformers recognize that the loads permissible for a transformer vary over a wide range depending on the operating conditions, such as ambient temperature, cooling facilities, etc. Under low ambient conditions, safe continuous loads can be greater than the rating. Under all conditions short-time overloads can be carried, the amount depending on the time and previous loading.

The 90-page volume, well-indexed and profusely illustrated, is made up of three parts. The first part includes definitions, standards, and important information relating to the rating, temperature rise, insulation classes and other performance specifications for induction apparatus, including distribution, power, and regulating transformers, reactors, instrument transformers, constant-current transformers, step and induction voltage regulators, current-limiting reactors, and general purpose specialty transformers. The second part consists of the new Test Code for Transformers; and the third part provides Guides for Operation of Transformers and Regulators. The two latter are designated as American Recommended Practices, the former for making acceptance tests to demonstrate that the requirements of the standards have been fulfilled, and the latter for giving permissible continuous and short-time loading for transformers and regulators.

The American Standards for Transformers, Regulators and Reactors (Including Test Code and Guides for Operation) (C57.1, C57.2, C57.3—1942), complete in one volume, may be obtained from the American Standards Association, 29 West 39th Street, New York, at $1.25 per copy.

Annual Meeting of Canadian Association

THE 53rd Annual Meeting of the Canadian Electrical Association was held at the Log Chateau, Seigniory Club, Quebec, Canada, on June 17 and 18, 1943.

Most of the meetings were taken up with a discussion of problems of operation under present conditions and post-war problems involving Appliance design and prices, Dealer Relations, Industrial Rates, Plant Rehabilitation, Uses for Surplus Power and Rural Electrification. The address of the president, W. C. Mainwaring, appears in this issue of the BULLETIN.

Davis M. DeBard, Vice-president, Stone & Webster Service Corp. addressed the delegates on the subject "After War—Prosperity, If Planned" in which he urged the members to promote the idea of each individual industry in their respective territories to make post war plans *now* and to foster the idea of private incentive and aggressive action of each separate business for the sake of a national prosperity.

Courage, resourcefulness and confidence will be necessary to assure an improved economic position after the war and he called for a return to individual responsibility as the means of future progress.

He cautioned against tying up excess capacity, after the war, with long term contracts based on incremental cost and reducing rates to get business which can only be justified on incremental costs and recommended that advantage be taken of the opportunity to correct errors of the past, such as over-emphasis of company appliance sales, over-emphasis of dealer sales, cumbersome dealer cooperative plans, the errors of subsidizing dealers, the errors of company salesmen's compensation plans and many others, and urged an aggressive operation of utilities' Sales Departments.

H. D. Read, Vice-president, Opinion Research Corp., outlined the details of "Public Opinion Surveys" and cited the results of several important surveys made in the past and their relation to actual fact as proved at a later date.

The subject of "Rural Electrification" was covered in a paper by Prof. E. O. Turner, President, Association of Professional Engineers of New Brunswick, who reviewed the progress of rural electrification in Canadian provinces and in certain states wherein far reaching and extensive programs have been carried out by both publicly and privately operated systems.

Prof. Turner then turned to the recent report of the Manitoba Electrification Enquiry Commission in which he referred to some general deductions that seem far from justified and pointed out that the experience and advice of privately operated electric utilities and manufacturers of electrical appliances and equipment was not called for in the preparation of the report and urged a pooling of the best advice of *all* interests for the best possible solution of the problem.

"Reconstruction and the New Employee" was the subject of a paper by Alan Brown, vice-president of the Association, who called on each member company to (1) Lay out a program of post-war work on its existing plant and a rural extension scheme in co-operation with its provincial Government, (2) Make a survey of manpower requirements and pledge ourselves to absorb a given number of trained men, (3) That the Association prepare a set of practical courses in the operation and maintenance of power plant, transmission and distribution equipment and (4) That the Association take whatever steps are necessary to have the training program carried out through the Department of Pensions and National Health.

At an Executive Committee meeting following the Annual Meeting a Committee was set up to follow through and implement certain proposals, which were formulated in a press release, as follows:

"The Canadian Electrical Association which comprises the leading power companies and electrical manufacturers, at its fifty-third annual meeting has set an objective of a one billion dollar post-war program to include (1) maximum employment, (2) rural and farm electrification, (3) the further modernization and extension of electric power systems, (4) the production of electrical appliances for the low income group, (5) the conversion of wartime plants to peacetime production, (6) the application of electricity to transportation.

"To this end a ways and means committee was appointed which will coordinate the plans of the association members along lines meeting with governmental cooperation and approval."

Electrical Affairs in Canada

(*Continued from Page 220*)

ble terms to the Governments of their respective provinces and indicate their willingness to provide service if the Government will extend to them the same privileges and subsidies that they know it will be necessary to extend to publicly operated utilities so that this rural service can be made possible. Again I repeat, there is a great need for public enlightenment.

Our many Committees have been active throughout the year, and although the Mid-Winter Conference both in the East and the West was cancelled, a great many studies have been made and these will be reported on during this Conference. To all those who have been active on the Committees and have therefore advanced the value of the Association to its membership I express the appreciation of our Executive.

During the life of this Association we have seen our industry grow by leaps and bounds to a point where it is now one of the most important factors in both the social and economic life of our country. It is destined to play a much greater part in our future economy. The cessation of hostilities will mean a resumption of the manufacture of civilian goods, and with the scientific advances made during the present war we will have many new applications of electric service and many new materials to use in the construction of the appliances available to our consumers. This brings to all of us a greater responsibility than was ours in the past. We have always striven to provide the greatest possible service at the lowest possible cost, and this must certainly motivate us in the post-war period. Just as the brains and the initiative of this great industry have carried our war production to unheard of strides and thereby shortened the period of warfare, we must apply ourselves as diligently to the problems of peace and see that the greatest possible extension of electric service is made so that all may enjoy the comfort and convenience that it is within our power to provide.

PERSONALS

THOMAS W. MARTIN, president of the Alabama Power Co., has been awarded the honorary degree of doctor of laws by the University of Alabama.

A. C. MARSHALL, president of the Detroit Edison Company, has been honored by Wayne University with the degree of Doctor of Arts in Business Administration.

The University's citation read in part:

"A skillful executive in the field of public utilities administration, he has brought to his high position a philosophy of public service which has won for his company a sound financial status, an abiding public good will, and the deep loyalty of thousands of employees. In a city famous for its benevolent and civic-minded business leaders, he is an outstanding executive and citizen."

N. E. FUNK, vice-president in charge of engineering of the Philadelphia Electric Co., has been awarded the honorary degree of doctor of engineering by Lehigh University.

CHARLES E. KOHLHEPP, vice-president of the Wisconsin Public Service Co., has been made director of WPB's program bureau, under Program Vice-Chairman J. A. KRUG.

M. B. COVELL, superintendent of supply service, Union Electric Co. of Missouri, has been elected to succeed F. A. Compton, Detroit Edison Co., as chairman of the Public Utility Group, National Association of Purchasing Agents. J. R. MILLIKAN, Dallas Power & Light Co., was chosen at the same time for the office of secretary-treasurer.

T. D. JOHNSON, vice-president of Alabama Power Co. and head of its industrial development division has resigned to take up new duties at Reading, Pa., with Vanity Fair Mills, Inc., where he will be connected with the executive staff of that company.

Mr. Johnson is a native of Ozark, Ala., and a graduate of the University of Alabama with the degree of B.S. in electrical engineering, class of 1916. Shortly thereafter he joined the power company and for many years actively engaged in its new industries work. He was elected a vice-president in 1941.

CONVENTIONS AND MEETINGS

JULY

1 American Society for Testing Materials, Pittsburgh, Pa.

SEPTEMBER

14 National Association of Railroad and Utilities Commissioners, Edgewater Beach Hotel, Chicago, Ill.

OCTOBER

11-13 American Gas Association, Jefferson Hotel, St. Louis, Mo.

5-7 32nd National Safety Congress and Exposition of the National Safety Council, Sherman Hotel, Chicago, Ill.

25-29 National Electrical Manufacturers Association, Waldorf-Astoria Hotel, New York, N. Y.

NOVEMBER

29-30-Dec. 1-3—The American Society of Mechanical Engineers, Pennsylvania Hotel, New York, N. Y.

Mr. Johnson is being succeeded as head of the industrial development department by J. R. LESTER, who for the past ten of his 24 years with Alabama Power Co. has been merchandise sales director and who for six years has been associated with the company's industrial development work. Mr. Lester is a graduate of Alabama Polytechnic Institute.

RUSSELL W. SYMES, Secretary and General Accountant of The Detroit Edison Company, has been elected a Vice-President of the Company.

Mr. Symes came to Detroit Edison in 1906, as a clerk in the Accounting Department. He was promoted to bookkeeper, assistant accountant, general accountant, and in 1935 became Secretary of the Company. Mr. Symes is Chairman of the Employee Retirement Board, and is a director and officer of various wholly owned subsidiary companies of Detroit Edison.

HARRY S. SLOCUM, resident engineer of the Appalachian Electric Power Co., at Bluefield, W. Va., who has been closely identified with the expansion program of the company since its inception, has retired from active service. He has been succeeded by C. L. ORR, American Gas & Electric Co. engineer, who in recent years has been connected with the Ohio Power Co., at Philo, Ohio.

MILTON B. LENT has been appointed manager of the Naugatuck and Seymour district of the Connecticut Light Power Co. He has been connected w the company since 1934 and bef World War I was employed by it clerical service. His headquarters w be at Naugatuck.

HOWARD M. SHARP, manager of lighting bureau of the Buffalo Niag Electric Corp., has been elected presid of the Illuminating Engineering Soci

Electric Water Systems Council Program

THE Electric Water Systems Co cil has inaugurated a cooperat educational program between utili agricultural colleges, manufacturers their dealers to help farmers main and care for farm electric water syst and other motor-driven equipment. series of seven suggested radio talks newspaper releases on care and ma nance and increased use of existing eq ment will be sent to the agricultural leges, extension services and electric ities to assist them in carrying on educational program on the mainten and care of farm equipment. In releases, reference is made to a bo entitled, "Timely Tips on Wartime and Maintenance of Electric Pumps and Water Systems," whi being made available for distributio farm customers through utilities, ty agents, experiment stations and farm pump equipment dealers and m facturers.

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